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THE AUTONOMIC NERVOUS SYSTEM*

(*Concluded from p. 1201*)

BY PROF. W. R. HESS, M.D.

DIRECTOR OF THE PHYSIOLOGICAL DEPARTMENT OF THE UNIVERSITY OF ZÜRICH

Sleep as a Regulating Process

Sleep is a vegetative process by which the autonomic nervous system regulates the activity of the higher cerebral functions.

The most striking physiological characteristic of sleep is the loss of consciousness, which is most clearly demonstrated by the fact that the sleeping organism has lost contact with its environment. The sense-organs have ceased to function; a sleeping person is always depicted with closed eyes, the ineffectiveness of sound being a direct measure of the depth of sleep. The skeletal musculature is also in a passive state; the muscles of a sleeper are perfectly relaxed. Even the reflexes which in the waking state are only absent in serious nervous disorder cannot be produced in deep, dreamless sleep. Between deep sleep and waking there is a series of intermediate stages, during which a certain amount of thinking and coördinated movement can take place; this thought and movement, however, is always rudimentary when measured by its effects and bears no relationship to the immediate environment.

The state of sleep modifies not only the animal functions, but also to a certain extent the activity of vegetative organs. A typical example is the inhibition of the circulatory system, which is shown by the decrease in the heart-rate, the fall in the blood pressure, and the corresponding change in the breathing, which is slower, the air exchange being diminished. These modifications must not be regarded simply as secondary effects of bodily rest. During sleep the carbon dioxide concentration in the blood is increased and its reaction is changed. When these conditions are present in the waking state they substantially activate the breathing mechanism, and their failure to do this during sleep indicates a damping of the sensitivity of the respiratory centres. For these reasons the observed changes in circulation and breathing—i.e., in those vegetative functions which are most intimately connected with physical and psychic activity—should not be considered as consequential on but as collateral to the change in the behaviour of the animal system during sleep.

The influence of sleep on the activity of the digestive and excretory apparatus is less marked; it continues to function even in the deepest sleep. The volume of urine decreases and the necessity for urination is postponed. It is characteristic of the digestive apparatus that if food is taken before sleep it is completely assimilated, but no feeling of hunger sets in. There is also a slight change in the temperature regulation, so that the body temperature is lowered.

The main symptoms of sleep are, therefore, a deficiency in preparedness for animal activity, with a corresponding inhibition of those vegetative accessory organs which are necessary to the fulfilment of animal functions. From this angle it is impossible to comprehend either the nature or the mechanism of sleep, because a negative effect is not a physiological performance. I emphasised this principle in discussing the effect of the vagus on the heart; inhibition, properly interpreted, is a means to ensure economy and repair. The same positive effects are just as obvious in the process of sleep. Of course, a man becomes aware of them not during sleep itself, but after it has attained its physiological end. His inability to work when fatigued is transformed into a will to perform, and his capacity to achieve is restored. The special mechanisms which bring about repair during sleep are hidden in the tissues. They have not yet been fully explained; their existence is only deduced from their effects; yet they lie at the heart of the problem of sleep, and the resting of the sense-organs, muscles, and psychic functions are only accessory factors facilitating restoration within the tissues.

Although there is nothing really new in this interpretation, I am hopeful that it may lead to new work which will link up the mechanism of sleep with those functions whose duty it is to regulate the conditions within the tissues—i.e., which will relate sleep to the vegetative functions.

On the basis of these arguments, I suggest that sleep is a function of the autonomic nervous system and reflective in character, the end-organs of the reflex being those centres in the brain which serve the animal functions. This reflex determines an active inhibition quite comparable to the vagal control of the heart, and may therefore be assigned to the same part of the autonomic nervous system as the vagus: the *parasympathetic*.

One of the most recent theories of sleep, that of Pavlov,[18] is based on the fact that dogs trained to respond to a stimulus by a conditioned reflex—e.g., to an acoustic signal followed by a meal—often fall asleep when food does not follow upon the signal. The first effect of this omission is an inhibition of the flow from the glands in the digestive tract which ordinarily begins on the reception of the signal. This inhibition is quickly followed by a strong need for sleep, which Pavlov interprets as a spreading-out of the inhibition originally localised in the centres controlling the digestive secretory glands. The important feature of this theory is its cortico-central basis. I maintain that the phenomenon is produced by the autonomic nervous system, and that sleep is by its very nature a vegetative function controlled by orderly reflexes.

THE MECHANISM OF SLEEP

I will state a few of the obvious questions this theory raises. If a reflex mechanism is at work in sleep, what is its exciting stimulus, and where and how does it act? If the autonomic nervous system serves as a mediator, is not the endocrine system also involved? A reflex postulates a reflex centre: where does this lie? Lastly, what is the proof of this theory? I suggest the following answers:—

The primary action of the exciting stimulus must bear an intimate relationship to the prevailing conditions in the tissues, whichever they be, where it is set up. For the time being the question must remain open whether the origin of the stimulus is confined to definite parts within the central nervous system, or whether, in addition, impulses from the periphery are carried to the brain. It is clear that external influences are not without significance, and this is

* Abstract of lectures delivered at University College, London, on May 12th and 13th, 1932.

the field in which Pavlov's conditioned reflex theory can be correctly applied to the phenomenon of sleep. The atmosphere in the sleeping quarters, the bed, and the time are factors which through habit and training have become so closely related to the onset of sleep that they constitute conditioned stimuli. They play much the same part as the clatter of plates and the appetising odour of food at dinner-time play in exciting salivation.

The second hypothetical question was: Can the mechanism of sleep not be influenced by stimuli other than those developed within the autonomic nervous system? Are there sleep-hormones, or, more generally speaking, sleep-producing substances? Piéron,[20] in his "hypnotoxin" theory, suggested that the function of sleep was regulated by a chemical mechanism. Recent experimental work by H. Zondek and A. Bier,[19] of Berlin, suggested the surprising conclusion that the bromine compounds in the pituitary glands were substantially diminished during artificially induced sleep, but that the bromine content of the medulla oblongata during sleep is considerably higher than it is in the waking state. They contend that the pituitary empties itself of "bromhormone" during sleep and is filled up again just before or in the act of waking. Interesting as these investigations and the hypotheses based on them are, we must as yet await further research, and confirmation will be necessary before the existence of the "pituitary sleep hormone" can be accepted as proved.

The next question inquires the nature and mode of action of the intermediary reflex centre or "sleep centre." The latest ideas on the physiology of the central nervous system, as stated by Bethe[21] and by Goldstein,[22] threaten to destroy our present general views on brain centres. I will not commit myself at this stage to an opinion which would have to involve the problem of the localisation of the hypothetical sleep centre, but I will merely mention the work of Economo,[23] who has had wide experience of patients suffering from a pathological tendency to sleep. He places this sleep centre in the region where the aqueduct of Silvius opens into the third ventricle. He has also made the important observation that disturbances of the musculature of the eye very often accompany a pathological desire for sleep, and deduced from it that the sleep centre is close to the oculomotor nuclei. I accept Economo's conclusions only in part: I look upon the section he indicates as an area which exerts a positive influence on the individual's activity.

In answering the final question, which asks for proof, I should like to call attention to two physiological facts. The first, the contraction of the pupil during sleep, which also occurs in absolute darkness, has been known for a very long time without being properly related to the whole mechanism of sleep. Anybody can observe it by surprising the sleeper with a flash-light and forcibly opening the eyelids. As there is no external cause for a contraction of the pupil, it must be due to a change within the central nervous system, and, since the pupillary sphincter is controlled by the parasympathetic, such a change must be an expression of the predominance of certain cranial parts of the parasympathetic.

Attempts have been made to explain the narrowed pupil of sleep as a result of retention of carbon dioxide and consequent stimulation of the corresponding centres, but this explanation does not account for the sudden dilatation which follows such stimuli as noise. This instantaneous response could hardly be produced by the exhaustion, however rapid, of the carbon dioxide from even a single centre, let alone from the brain as a whole. It is far more reasonable to regard the sleeper's contracted pupil as evidence of a change in the equilibrium between the two complementary portions of the vegetative nervous system.

The second physiological fact to which I wish to call attention has been established by very recent investigations. E. Koch[24] has shown that a sleep-like inhibitory state can be induced reflexly by way of the carotid sinus, and that parasympathetic tone is simultaneously increased. This carotid sinus reflex can be demonstrated very impressively in a dog recovering from an anæsthetic. In Koch's own words: "Its movements stop almost at once and its head and tail gradually hang more and more limply. The animal sinks loosely together, often on its side, to lie as in sleep." The description constitutes experimental evidence of the reflex inhibitory influence which the autonomic nervous system exerts on the centres of the animal nervous system.

Experiments in Artificial Sleep

In our own attempt to test this theory of sleep by experiment,[25] we were confronted with the task of artificially disturbing the equilibrium between the central influences of the sympathetic and parasympathetic respectively. One method of doing this is to use a substance which will act selectively on one of the two antagonistic parts of the autonomic nervous system. To comply with our requirements, the drug would have to dampen the sympathetic but activate the parasympathetic. These specific properties are found in preparations of ergot. We therefore injected ergotamine (Sandoz) in small quantities into the third ventricle, and obtained the following results. Soon after the injection the animal loses all interest in its environment; the pupils become, as in normal sleep, contracted. External stimuli—light included—will bring about a momentary dilatation of the pupil and awaken the animal. Should the animal then be left in peace, it will go to sleep again. This result, which can be repeated at will, is consistent with the dependence of the animal functions upon the autonomic nervous system. The field activated by the ergotamine was still doubtful but by varying the site of injection we were able to obtain a certain amount of information.

For the sake of greater certainty, we also used another method; that of electrically stimulating those portions of the brain which clinical and pathological experience show to be associated with the regulation of vegetative functions. We therefore carried out experiments on the stimulation of the brain-stem, particularly the diencephalon.

Various preliminary technical problems had to be solved, for none of the methods suggested in the literature was designed to give unequivocal results. For instance, it was necessary to obtain electrodes which would stimulate the deeper layers without injuring the superficial layers through which they passed, and the apparatus conducting the current had to allow the animal free movement and psychic expression. These conditions can be fulfilled by using extremely fine electrodes. Moreover, the electrodes have to be completely insulated so that only their points are bare, to prevent stimulation of the portions of the brain they traverse. It is especially important to prevent the escape of secondary side currents and to avoid the effects of polarisation of the electrodes. Finally, the points of stimulation have to be very

accurately determined and the effects registered in appropriate detail for future analysis.

The electrodes are of enamelled steel, slightly thicker than 0·02 mm., so that the cross-section of a single needle does not measure the twentieth part of a square millimetre. They are finely pointed, so that they can glide through the brain tissue and push the fibre tracts aside instead of tearing through them; this action was confirmed by histological sections. Polarisation is prevented by a special arrangement of the apparatus, and the elimination of side current effects is based on thorough research into the thresholds of stimulus for different types of nerve in relation to various forms of current. A pulsating direct current in which sudden changes of potential are damped by resistances and condensors provides the most suitable form of electrical impulse for exactly localised stimulation. This result is, in our opinion, of primary importance for methods of brain stimulation in general.

The experimental animals were cats, which were anæsthetised with nitrous oxide in order to avoid the after-effects of liquid anæsthetics. The effects of stimulation were registered cinematographically; by this method every detail of the reactions can be reproduced at any later time and compared with the histological preparations which show the exact point of stimulation.

The whole series of experiments, with photographic illustrations, is described in a monograph.[21]

RESULTS

A great number of the experimental cats were brought into a state characteristic of physiological sleep, as indicated by the condition of the eyes, the posture of the body, and the general psychic behaviour. Reflexes which may act in natural sleep can also be evoked in this state, and the animal responds to external stimuli much as in normal sleep. When awakened it behaves normally, and not like an anæsthetised or a stupefied animal.

The interpretation of the whole histological material has not yet been completed, but it is safe to assume that sleep may be brought on by stimulating, not only a certain definite area, but a whole series of points. These points have, it seems, a close relation to the centres or paths of extrapyramidal motor function. At present I cannot say whether any of the centres or nerve-fibres which were stimulated relate to a sleep centre. Our observations, however, show clearly that stimuli which arise deep within the brain can manifest themselves as changes in an animal's behaviour. Their connexion with the conscious sense functions, voluntary movement, and the areas which control psychic activity in general is as yet unsettled. I think, however, that it is sufficiently important that our stimuli gave rise to a radical change in the preparedness of the animal for function, because this result illustrates the active nature of the typical signs of sleep. Establishing as they do a relationship between brain-stem and cortical functions, our observations appear to reach far beyond the problem of sleep into the physiology and pathology of the central nervous system.

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INTRAVENOUS VACCINES OF HÆMOLYTIC STREPTOCOCCI IN ACUTE RHEUMATISM IN CHILDHOOD

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OF recent years the theory that hæmolytic streptococci play a part in the production of acute rheumatism has gained increasing support, both in this country and in America.

While observing the effect of nasopharyngeal infections in isolated communities, Glover[1] showed that outbreaks of such infections were likely to be followed after two or three weeks by smaller outbreaks of acute rheumatism. Later, in conjunction with F. Griffith,[2] he showed that nasopharyngeal infections which were subsequently followed by acute rheumatism were caused by hæmolytic streptococci. Meanwhile we had studied an epidemic of hæmolytic streptococcal throat infection in a ward containing 25 rheumatic children at the Cheyne Hospital; of 13 children so infected, 8 underwent a relapse of acute rheumatism after a period of two to three weeks.[3 4]

This investigation has been extended, and a bacteriological examination of 71 rheumatic children with acute nasopharyngeal infection has been made. In 32 the infection was due to hæmolytic streptococci, and 24 of these subsequently developed an acute rheumatic exacerbation. In the remaining 39 children the nasopharyngeal infection was associated with the pneumococcus, *Micrococcus catarrhalis*, or the *Bacillus influenzæ*, and none of these infections was followed by a relapse of acute rheumatism. It was found difficult to determine the rôle of the non-hæmolytic streptococci in causing these throat infections, since they are normally present in the mouth and throat.

Our findings were confirmed by Bradley,[5] who recorded 15 instances of primary acute rheumatism arising after hæmolytic streptococcal infection in public school boys. Coburn,[6] in his monograph on "Acute Rheumatism," has also collected much evidence in support of the view that the hæmolytic streptococcus is the infective factor.

The fact that rheumatic children show a higher skin sensitivity to extracts prepared from hæmolytic streptococci than do non-rheumatic children,[7] and the recent demonstration by Todd,[8] that the blood of rheumatic patients contains a high titre of

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antihæmolysin, adds further confirmation to the incrimination of the hæmolytic streptococcus.

The immunological mechanism which is involved when an attack of acute rheumatism follows at an interval of 10 to 20 days after an acute upper respiratory infection with hæmolytic streptococci is not as yet understood. Schlesinger [9] and others have drawn an analogy between this rheumatic reaction and the development of serum sickness, which occurs at a definite interval of about ten days after the injection of foreign serum. Swift [10-12] and his co-workers in America have been led by animal experimentation and clinical observation to the conclusion that the symptoms of acute rheumatism are due to a changed body reaction towards the breakdown products of streptococci. They have also shown that in animals repeated intradermal, subcutaneous, or intramuscluar injections of living or dead streptococci will give rise to a high degree of tissue hypersensitivity to streptococci or their products, while intravenous injections have the reverse effect of desensitising the animal.

Applying these results to patients with acute rheumatism, Swift and Wilson, and their collaborators [13 14] have attempted to desensitise children with acute rheumatism, by giving intravenous vaccines of whole heat-killed hæmolytic streptococci; nucleoproteins prepared from these and other streptococci were also used. Small doses were given, beginning with 50,000 to 250,000 organisms, and slowly increasing up to 10 million. In a preliminary report they showed that the incidence of relapses of acute rheumatism was lower in the injected patients than in a control group of rheumatic subjects.

These results have led us to take up a similar though slightly modified line of therapy, and the following report deals with our experiences with this method in 47 children. The ultimate advantage of this form of treatment cannot be assessed until the patients have been observed for some years, and the incidence of rheumatic relapses in them compared with a control series of rheumatic children. Our experiences have, however, led us to certain conclusions regarding the selection of suitable cases, and also the effect of this treatment on the skin reactions and on the sedimentation rate of the red cells has been studied. We therefore feel justified in making this preliminary report in the hope that our findings may be of value to others.

TECHNICAL METHODS USED

The Inocula.—A hæmolytic streptococcus originally isolated from a patient with severe tonsillitis (known as Carter; this organism caused the epidemic of tonsillitis followed by rheumatic relapses at the Cheyne Hospital) was used for the majority of the patients. Some, however, received an autogenous vaccine prepared from the hæmolytic streptococci isolated from their own throats.

Method of Preparation.—The organism was planted on to blood agar, and after a 24-hourly incubation single colonies were picked off and placed in two tubes containing 10 c.cm. of glucose phosphate broth (bullock's heart digest broth containing 0·05 per cent. glucose and 0·1 per cent. sodium phosphate). These tubes were incubated overnight, and the following morning each culture was added to two bottles, each containing 50 c.cm. of glucose phosphate broth. The bottles were incubated for six hours, when the resultant culture was centrifuged. The deposit thus obtained was washed twice in sterile saline solution 0·85 per cent., and finally suspended in 15 c.cm. of carbol-saline. This suspension was made up to a standard of 1000 million organisms per c.cm. (using Brown's vaccine comparator tubes). The vaccine was then heated for 15 minutes at 60° C., and finally tested for sterility. Dilutions of 100, 10, and 1 million per c.cm. were put up from this weekly. The stock vaccine was prepared afresh each month.

Dosage.—The vaccine was used in the following dosage, each dose being given weekly.

Week.	Dose (in organisms per c.cm.).	Week.	Dose (in organisms per c.cm.).
1st	200,000	7th	15 mill.
2nd	500,000	8th	20 „
3rd	1 mill.	And by increases of: 10 mill. per c.cm. to 100 mill.	
4th	2½ „		
5th	5 „		
6th	10 „		

mill. = million.

TREATMENT OF OUT-PATIENTS

After trying various methods, the following routine has been adopted.

The child is first submitted to thorough clinical examination, and the weight, throat culture, sedimentation rate, and degree of skin sensitivity to hæmolytic streptococcal extract are recorded. If the child is found to be in the inactive or convalescent rheumatic state, intravenous vaccine therapy is commenced. At each attendance the sedimentation time is first taken by Dr. Payne.[15] The children are then weighed, and as each child comes up for its injection, the mother is questioned as to any reaction after the last injection. If the general state of health is satisfactory, the sedimentation rate not raised, and if no troublesome reactions have occurred, an intravenous injection is given, using a small-bored needle (Allen and Hanbury Record syringe, needle size 16). By these means it is possible to control the treatment and avert any untoward results. Except for a few mild reactions in the early part of the treatment, we experienced no difficulty or harmful results, and we can affirm Wilson's and Swift's statement that this intravenous therapy can be used without undue risk in an out-patient clinic.

TREATMENT OF IN-PATIENTS

Treatment of patients with active rheumatism was always carried out in the hospital wards where the children were under constant medical supervision, and where four-hourly pulse and temperature records could be kept. Very small doses were used to begin with, starting with 50,000 or 100,000 organisms. Small daily doses for four days, with an interval then of five days before the next injection, were given at first, but this method was abandoned as the effect of the vaccine was cumulative and difficult to judge. Eventually injections were given once a week or every fifth day. If the child reacted strongly, as indicated by a rise of temperature, pulse-rate, or sedimentation time, the dose of vaccine was kept low, and only very gradually increased. In a few cases exacerbations of acute rheumatism were observed, and treatment was abandoned. In those children whose clinical condition showed an improvement the dose was gradually worked up to 70 to 100 million.

RESULTS

Cases of inactive or convalescent rheumatism.—Twenty-eight of these children received a full course of treatment up to 100 million organisms; 21 were treated as out-patients at the Hospital for Sick Children, Great Ormond-street, and 7 in the wards at the Cheyne Hospital. Of these patients 17 had had one or more attacks of rheumatic carditis with chronic injury to their hearts, 6 were cases of convalescent chorea, 4 had subacute rheumatism, and 1 was an instance of streptococcal erythema nodosum. No difficulty was found in treating the cardiac cases, and all have done well since the end of the course of treatment. It was found more difficult to treat the convalescent choreas on account of their high sensitivity to hæmolytic

streptococcal extract and consequent liability to unpleasant reactions after inoculation. The treatment appeared to have little or no effect on the vague pains in the limbs, which have been loosely termed "subacute rheumatism." There is, however, no good evidence for thinking that hæmolytic streptococcal infection plays such an integral part in the production of "subacute rheumatism" as it does in rheumatic fever, and in fact there are undoubtedly many diverse causes for the vague pains in the limbs of children. The failure of intravenous vaccine therapy to affect "subacute rheumatism" should not therefore be allowed to influence one's opinion when trying to assess the value of this line of therapy in acute rheumatism.

In eight cases it was necessary to discontinue the treatment; in four, on account of the development of diphtheria or influenza; in one, to the difficulty of finding a vein in a very plump girl; and in three who, during treatment, developed an acute hæmolytic streptococcal sore-throat followed by a relapse of acute rheumatism. These three cases had reached doses of vaccine up to 1 million, 5 million, and 30 million, respectively, when the sore-throat occurred. In the first two the vaccine treatment had only reached an initial stage, and the question of its protective value against relapses of rheumatism is hardly affected, but in the third case the treatment was well advanced, and although the relapse of rheumatism was mild, the vaccine did not prevent either the initial sore-throat or the subsequent rheumatic relapse.

Cases of active rheumatism.—Intravenous vaccine therapy was attempted in seven children who were suffering from active rheumatic heart disease, and who were in the wards of the Hospital for Sick Children or the Cheyne Hospital. Small initial doses were found necessary because of reactions following inoculation. These reactions followed such small doses as 200,000 and 500,000 organisms, and were characterised by a rise in temperature, pulse-rate, and sedimentation time, and a return of symptoms of acute rheumatism. The treatment was discontinued in three cases on account of these reactions; in one, a pericardial rub was heard on the day following an injection of 200,000 organisms; in another, pericardial frictions were heard after inoculation with 200,000 organisms, and again, a week later, after 500,000 organisms; the third had two courses of treatment which were discontinued after reaching 5 million and 10 million organisms, respectively, on account of general reactions with pains in the joints.

The remaining four children tolerated the vaccine well, although mild reactions occurred in the early stages of treatment, and the dose was taken up to 30 to 70 million. During the treatment their clinical condition improved, and the sedimentation rate dropped to normal. None have subsequently relapsed, although a year has passed since the injections were completed.

It is difficult on so few cases to draw any definite conclusions, but it is interesting to note that in those cases which improved, the infection of the throat with hæmolytic streptococci soon cleared up, while in those in which the treatment seemed detrimental, the tonsils were persistently infected with hæmolytic streptococci as shown by weekly throat swabs.

DESENSITISATION

The effect of the inoculations on the cutaneous reactions to hæmolytic streptococcal extract (H.S.E.)‡ was noted in 25 children who gave strongly positive skin reactions to 0·1 c.cm. of 1/250 and 1/500 dilutions of standard H.S.E. before the beginning of treatment. On retesting at the end of treatment, 16 (64 per cent.) gave completely negative skin reactions, while 9 (36 per cent.) showed little or no reduction of skin sensitivity. A closer study of the actual cases shows certain points of interest. In some cases a very marked change of sensitivity took place.

For example, a girl, aged 11 years, before treatment gave a very strong skin reaction; the intravenous inoculations were well tolerated, and the child improved clinically, and gained weight during the treatment. After receiving inoculations up to 100 million, her skin test became completely negative. Her serum was then tested for the presence of immune bodies, and gave a marked complement fixation and a type specific agglutination (F. Griffith's method) up to 1/32.

In this case clinical improvement, desensitisation, and the presence of immune bodies all appeared to run parallel. On the other hand a few children, who did not tolerate the injections well, did not lose their skin sensitivity and their clinical condition was not improved.

An instance of this was a girl, aged 10 years, who had had five attacks of erythema nodosum, each attack preceded by hæmolytic streptococcal pharyngitis. Her skin tests showed extreme sensitivity to H.S.E. She was given two courses of intravenous injections up to 40 million and 70 million, respectively. In spite of these inoculations her skin tests remained strongly positive, and she tended to get slight general reactions after each injection. On one or two occasions when a little of the inoculum was injected into the subcutaneous tissues a very sore arm resulted. After reaching 70 million in the second course of injections, she caught from her mother an acute hæmolytic streptococcal sore-throat, and a week later developed her sixth attack of erythema nodosum.

Another unsatisfactory case was that of a child, aged 11 years, who had had four attacks of chorea. Her skin test remained strongly positive to H.S.E. after a full course of treatment, and on going back to school a week after the inoculations were finished she developed a fresh attack of chorea. In neither of these cases could immune bodies be demonstrated in the serum after the injections.

DISCUSSION

The value of this line of treatment can only be properly judged after the lapse of a few years, when it will be seen whether or not rheumatic relapses have been prevented. Its value in active cases can hardly be gauged on the few cases at our disposal, but certain points have arisen which need criticism. It was noticeable that those children who soon lost the hæmolytic streptococci from their throats tolerated the injections well, at the same time showing steady clinical improvement. On the other hand, children with hæmolytic streptococcal infection persistent in their throats were not helped by the injections, and in three cases the inoculations gave rise to acute rheumatic exacerbations. Moreover, these exacerbations occurred after the initial doses of vaccine.

These experiences find a close parallel in the experimental work of Swift, who found that when animals had been sensitised by *intradermal*, *subcutaneous*, or *intramuscular* injections of bacteria, their sensitivity could be maintained by the artificial production of a septic focus such as an infected agar tumour. Such animals succumbed to further injections of bacteria in doses which were sublethal for normal or immune animals, and the sera of such animals contained no immune bodies against the organisms used. It was, however, possible to desensitise these animals by gradually increasing doses of bacteria given *intravenously*, and then their sera could be shown to have developed immune bodies.

‡ A full description of the preparation and reactions of this extract is given elsewhere (ref. 7).

It may be that the children who showed exacerbations after the early injections were so highly sensitised by the persistent infection in their throats that the initial dose of vaccine, small though it was, was yet too large to be tolerated by them. Swift obtained similar reactions in some of his cases, and regarded them as specific, as such a dose is too small to produce a non-specific protein shock.

We have previously shown that although positive skin reactions with hæmolytic streptococcal extract (H.S.E.) are obtained in 80 per cent. of rheumatic children when tested within six months of an acute rheumatic illness, during the next six months the number remaining positive falls to 40 per cent. This does not account for the loss of skin sensitivity in our cases treated with intravenous vaccine, since some of them had had no acute rheumatic illness during a period of at least a year prior to the beginning of treatment; in others the loss of skin reaction was no mere weakening of the reaction, but a complete change over from a powerful reaction to no reaction at all; and loss of sensitivity occurred in 64 per cent. of the treated cases, which is a higher percentage than would be expected if the loss were simply due to the passage of time since the last acute rheumatic illness.

It is our experience that the treatment of inactive convalescent rheumatic children can be undertaken in an out-patient clinic organised along the lines indicated in this report, without risk of lighting-up acute rheumatic relapses. On the other hand, treatment of active cases should only be undertaken when the child is under the closest medical supervision, and not until the bacteriological condition of the throat has been ascertained.

Weekly estimations of the sedimentation rate of the red cells have been carried out in all our cases by Dr. W. W. Payne, to whom we are greatly indebted. This test has proved of great assistance in estimating the immediate effect of the treatment, and in giving us warning when the vaccine was likely to be injurious.

In conclusion we are reminded that the work presented here is still in an experimental stage. The results are encouraging inasmuch as they indicate that intravenous vaccines in small and graduated doses may have a definite desensitising effect, and also because so far none of these cases has had a subsequent rheumatic exacerbation, but further work will be needed before this line of treatment can play a substantial part in our efforts to prevent rheumatic heart disease.

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ANÆMIA FOLLOWING GASTRIC OPERATIONS

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THE extreme importance of normal gastric function to hæmopoiesis would suggest that removal of the stomach or operative interference with gastric digestion should be associated, invariably, with the development of anæmia.

TOTAL GASTRECTOMY

Hurst (1932) has recently been able to collect only five undoubted cases of Addisonian pernicious anæmia following complete gastrectomy. He mentions a patient of Butler's who was perfectly well six years after operation. Brigham in 1900 recorded the case of a man who was well two years after operation. It is open to question whether the anæmia in the case published by Moynihan in 1911 was megalocytic in character.

PARTIAL GASTRECTOMY

Following partial gastrectomy Hurst (1932) found five cases of Addisonian pernicious anæmia. In four no details of operative procedure are available. In the fifth the Billroth II. method was employed. Meinertz records the case of a man who 16 years after a big resection for carcinoma developed typical pernicious anæmia. Details of operative procedure are not given. No signs of recurrence of the growth were detected. Hangarter describes the case of a man who first had a gastro-enterostomy for duodenal ulcer; 11 years later partial gastrectomy by the Billroth I. method was performed. In spite of normal acidity values he developed pernicious anæmia at the age of 53. Borgbjaerg and Lottrip, without giving details, mention two patients who developed Addisonian pernicious anæmia after partial gastrectomy for gastric ulcer. This type of anæmia is therefore relatively rare as a sequel to such operations. Hurst, however, concludes that simple microcytic anæmia is quite common.

Gordon-Taylor found some degree of anæmia in 23 out of 52 patients, 3 of whom still had free hydrochloric acid in the gastric juice. In the majority of his cases resection was completed by retro- or ante-colic anastomosis after the Polya or Polya-Balfour technique. Morley also found anæmia which was hypochromic in character in 16 out of a series of 42 cases, 12 of which occurred in patients with the Polya type of gastrectomy. He therefore prefers a modification of Billroth I. method. Meulengracht mentions two patients, one of whom had had resection of the stomach and entero-anastomosis for peptic ulcer three years before anæmia developed. The other had a gastro-gastrotomy for peptic ulcer 27 years and a posterior retrocolic gastro-enterostomy 19 years before anæmia was found. Schneider and Carey record two cases with hypochromic anæmia. Conner, Hochrein, and Balfour each mention one. Witts (1930) mentions two instances of anæmia, one in a man and one in a woman, but no operative details are available. Six of seven patients described by Lublin had anæmia following gastrectomy by Billroth II. method. On the other hand Strauss and his fellow workers (Strauss, 1930), as the result of 221 partial gastrectomies for duodenal ulcer, regard partial gastrectomy as the operation of choice. They believe that at least 60 per cent. of the stomach

should be removed and the Polya type of operation carried out. Only in one instance did an anæmia which was present before operation persist. In all the others both hæmoglobin and red cell count remained the same or were improved. In a symposium held in 1930 (Berg, Douglas, Finney and Hanrahan, Gatewood, Hartwell and Felter, Horsley, Santée, Schwyzer, St. John), when the late results of over 400 cases of partial gastrectomy were reviewed, one surgeon only (Berg) mentioned anæmia, and then only to say that it did not occur. Louria, who followed a series of 129 cases for as long as three years after resection by both Billroth I. and II. methods, also does not discuss the possible development of anæmia. Lake in 1928 found no anæmia in 56 cases of partial gastrectomy in the majority of which Billroth II. method was employed.

GASTRO-ENTEROSTOMY

Hurst (1932) has collected seven cases of Addisonian pernicious anæmia following simple gastro-enterostomy without resection. Davidson records the case of a man who developed a blood picture compatible with a diagnosis of Addisonian pernicious anæmia 20 months after gastro-enterostomy. Free hydrochloric acid was present in the gastric juice. Lublin also mentions a man, aged 61, who developed pernicious anæmia two years after gastro-enterostomy. Gōrander described a woman, aged 61 years, who developed such an anæmia 25 years after operation for ulcer. As the patient was suffering from pulmonary tuberculosis, and the appearance of the stomach was not typical of ulcer, he suggests that the possibility of some tuberculous process in the stomach should not be overlooked.

Hurst (1932) and Meulengracht each mention one example of simple achlorhydric anæmia following gastro-enterostomy, while Witts has recorded this type of anæmia in four women and one man. Davies last year reported microcytic anæmia occurring in five women and one man after gastro-enterostomy. Lublin in a series of 43 cases found 20 with a mild anæmia and 9 with a marked anæmia. All those patients in whom exclusion of the pylorus was carried out had anæmia. In two further post-operative cases anæmia developed in association with pregnancy.

Experimentally a hypochromic anæmia has been produced in animals after complete gastrectomy. Such an anæmia only occurs if pregnancy follows the operative procedure (Ivy Morgan and Farrell). In no instance has a megalocytic hyperchromic anæmia been recorded after either total or partial gastrectomy in animals.

There appear then to be only 122 cases of anæmia following gastric operations in which details of the blood picture are available. The following three additional cases are therefore reported. One of them presented unusual hæmatological features.

THREE CASE-HISTORIES

CASE 1.—A single woman, aged 36 years. (L.H. Reg. No. 41627/31.) In 1912 she was an in-patient under Dr. Robert Hutchison, when a diagnosis of hæmorrhagic gastralgia was made. She then gave a four years' history of pain in the epigastrium and back, worse immediately after food. She had twice vomited blood.

Special examinations.—Blood count: red blood-cells, 6,000,000 per c.mm.; hæmoglobin, 95 per cent.; colour-index, 0·8. Test-meal: free HCl, 0·11 per cent.; total acidity, 47.

In May, 1921, she was readmitted under Mr. A. J. Walton.

Test-meal.—No free hydrochloric acid; total acidity, 36.
Operation (June 1st, 1921).—A wedge-shaped resection of an ulcer on the lesser curvature. Cut ends of stomach sutured together in layers with catgut. Pylorus occluded with running mattress silk suture. Posterior gastro-enterostomy performed, catgut being used for all layers.
Pathological report. (*S.D.* 835/21.)—A lozenge-shaped portion of stomach, 7·5 × 3 cm., showing a crateriform ulcer, 0·5 cm. in diameter and 0·4 cm. deep, with the mucosa firmly fixed round the margin. Microscopic: chronic progressive peptic ulcer through pyloric mucosa.

In November, 1921, she was readmitted under Mr. Walton.

Special examinations.—Test-meal: no free HCl; total acidity, 25. Blood count: red blood-cells, 5,000,000 per c.mm.; hæmoglobin, 90 per cent.; colour-index, 0·78; white blood-cells, 10,000 per c.mm.
Opaque meal (Nov. 7th).—Stoma present and very patent; pool of ulcer present along small curvature; upper half of fundus empties rapidly; pars media and pylorica show some atony and slower emptying rate.
Second operation (Nov. 16th).—Few adhesions in region of old wound. Old anastomosis acting perfectly and pylorus now patent again. Ulcer on posterior surface of stomach, ½ in. diameter, the base being formed of pancreas only. Partial gastrectomy performed, the proximal end of the stomach being anastomosed to the side of the jejunum, Polya method. No suture found in the neighbourhood of the ulcer.
Pathological report. (*S.D.* 1925/21.)—A portion of stomach together with a gastro-jejunostomy opening 11×7 cm. On the posterior surface, just encroaching upon the lesser curvature, 7 cm. from the duodenal end, a deep almost circular ulcer, 2 cm. in diameter, with mucosa firmly fixed round the margin. Microscopic: chronic progressive peptic ulcer through pyloric mucosa.

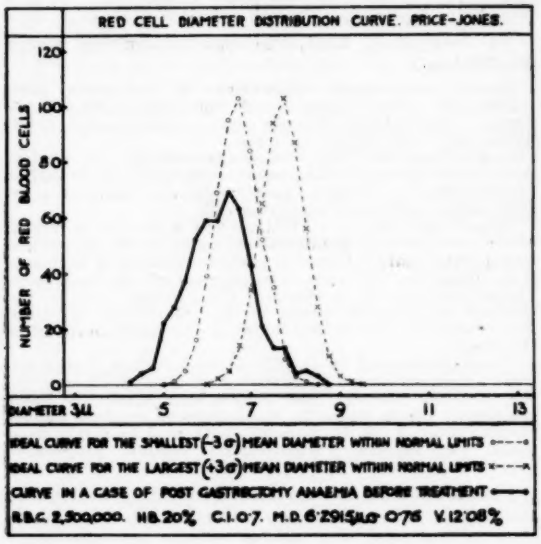
Pain after food and occasional vomiting continued, associated with diarrhœa. Further opaque meals showed that food was passing rapidly into the small intestine but there was no evidence of ulcer. Three attempts to perform a test-meal failed because nothing was withdrawn. In 1927 the patient became anæmic. On Oct. 20th, 1931, she was admitted under Dr. Donald Hunter as an emergency, complaining of dysphagia, great weakness, and wasting. For two years she had had difficulty in swallowing and had only been able to take semi-solids. For the last two months this dysphagia had been much worse and she had only taken fluids.

Clinical examination.—Weight, 5 st. Extremely wasted, ill-looking woman. Brownish pigmentation of the skin; no yellowing of conjunctivæ; no abnormality of nails. Tongue: smooth surface with many fissures; atrophy of filiform papillæ. Teeth: several loose and carious. Heart, lungs, and nervous system normal. Liver and spleen not palpable. No abdominal tenderness.
Special examinations.—Blood count: red blood-cells, 2,500,000 per c.mm.; hæmoglobin, 20 per cent.; colour-index, 0·4; white blood-cells 16,200 per c.mm.; reticulocytes, 1·2 per cent. The stained films appeared typical of idiopathic microcytic anæmia. Red cell diameter distribution curve: mean diameter, 6·2915μ; variability, 12·08 per cent.; microcytosis, 29·2 per cent. (Fig. 1). Direct van den Bergh reaction negative, indirect reaction, 0·2 mg. bilirubin per 100 c.cm. Fæces: no occult blood. Urine: a trace of albumin on one occasion only. Opaque meal: "partial gastrectomy; efferent loop in good size and shape. No suggestion of any connexion with the colon. The efferent loop is to the left and seems free and clear. No definite local tenderness."
Progress under treatment.—She was given pil. ferri carb. grs. 75 daily. There was a maximum reticulocyte response of 12·8 per cent. on the seventh day. The curve then fell gradually to normal. During this period a few immature white cells were seen in the peripheral blood. There was immediate clinical improvement. The red cells reached a level of 4,000,000 per c.mm. in 20 days, and the hæmoglobin was 56 per cent. at the end of 40 days, the colour-index being 0·65. In spite of this the stained films showed an apparent megalocytosis suggestive of pernicious anæmia, except that the majority of the cells were extremely hypochromic.

A red cell diameter distribution curve determined 36 days after iron was first given appeared typical of Addisonian pernicious anæmia (Fig. 2). The red cells showed a mean diameter of 7·7410μ, a variability of 12·6 per cent., and a megalocytosis of 19·6 per cent. She was therefore given liver extract, the equivalent first of ½ lb. and then of 1 lb. a day, instead of iron. At the end of five weeks the hæmoglobin had risen to 70 per cent., and the red cells remained

constant. As the improvement on liver was slow, iron was again given, and the patient left hospital a fortnight later with a hæmoglobin of 80 per cent., red blood-cells, 4,700,000 per c.mm., colour-index 0·85. A further red cell diameter distribution curve at this date showed a mean diameter of

FIG. 1



7·8125 μ, variability 9·9 per cent.; megalocytosis 15·6 per cent. (Fig. 3). All teeth were extracted just before the patient was discharged.

Home conditions were extremely bad, and the hæmoglobin fell to 72 per cent. Severe œdema developed in the feet and legs, as so often happens in patients treated with either iron or liver, but she remained extremely well. In view of the observations of Carmalt-Jones (1932) on the effect of marmite on œdema, she was told to discontinue her iron and to take three teaspoonfuls of marmite a day, which she has now done for four months.

The œdema is improved though still present. The hæmoglobin remains in the neighbourhood of 72 per cent. and she feels well. While in hospital she gained 1 st. 2 lb., weighing on discharge 6 st. 2 lb. The weight is now 8 st. 2 lb., which is in part accounted for by the œdema. As long as iron was given there was severe diarrhœa with as many as seven loose stools a day. This was uncontrolled by hydrochloric acid, bismuth, or any other form of treatment. When liver extract was taken instead of iron the motions became normal in number and character; on returning to iron diarrhœa recurred.

CASE 2.—A married woman, aged 41. (L.H. Reg. No. 20605/32.) In 1927 she was an in-patient under Mr. A. J. Walton, when she gave a history of a periodic epigastric pain occurring half an hour after meals for the last 20 years.

Special examinations.—Test-meal: free HCl 0·08 per cent.; total acidity 40 after one and a half hours. Opaque meal: ulcer on lesser curvature with spasm opposite it, otherwise quite normal stomach.

Operation (Oct. 19th, 1927).—Chronic indurated ulcer high up on lesser curve, too high for wedge resection. Partial gastrectomy. End-to-side gastro-enterostomy. Duodenal stump invaginated and buried. Three-quarters of stomach removed.

Pathological report. (*S.D.* 2292/27.)—Portion of stomach, measuring 24 cm. along greater and 13 cm. along lesser curvature, with 1·8 cm. of duodenum attached. Linear ulcer, 1·3 cm. long, 0·2 cm. broad, and 0·25 cm. deep, with ill-defined shelving edges, a scar at each end, and indurated margins, lying across the lesser curvature and just involving the posterior surface 1·5 cm. from the cardiac end. Numerous submucus hæmorrhages and erosions, largest 0·6 × 0·45 × 0·05 cm. deep, with sharply defined edges. Microscopic: chronic progressive peptic ulcer through fundal mucosa; dense infiltration of mucosa at cardiac and pyloric ends of specimen, with numerous plasma cells, a few eosinophil leucocytes, and a few groups of neutrophil leucocytes.

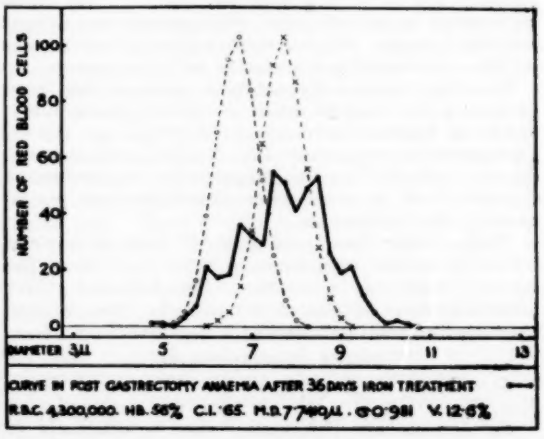
After operation she felt well until six months ago when she began to complain of a feeling of fullness and heaviness in the abdomen. Her tongue became sore and she had an occasional pricking feeling in the right side of her throat but no difficulty in swallowing. She had been pale since a girl but for the last six months this has been more marked. She has had palpitation, breathlessness, and œdema of the ankles for three months. Finger-nails have broken easily for six months. Meat and green vegetables once a day.

Clinical examination (Feb. 17th, 1931).—Extremely pale, rather thin woman. Tongue: smooth and rather raw; papillæ distinctly atrophic. Slight œdema of ankles, more marked of lumbar region. Heart and lungs normal. Liver and spleen not felt. Nails split longitudinally in places.

Special examinations.—Blood count: red blood-cells, 4,300,000 per c.mm.; hæmoglobin, 34 per cent.; colour-index, 0·39; white blood-cells, 4200 per c.mm.; reticulocytes, 0·6 per cent. Red cell distribution curve: mean diameter, 6·9425 μ; variability, 8·5 per cent. Test-meal: no free HCl; total acidity, 30. Opaque meal: "Gastro-jejunostomy has been performed. The stoma is patent at once. What is visible of the stomach is small, that is to say, that only about the fundus, and very little of the pars media becomes filled with barium. No hold-up at all at the stoma. No meniscus is visible, and tenderness occurs not only over the stoma but also over the first 5 or 6 in. of the loop of jejunum. A pause of considerable time takes place in the jejunum, about 6 in. from the stoma. Subsequently the meal is seen to pass on, so that if there is any adhesion causing a short delay in the jejunum it is not a big one. The first portion of the jejunum is dilated rather more than the average increase in size which takes place after gastro-jejunostomy. There is no good evidence of a jejunal ulcer."

She was given pil. ferri carb. grs. 90 a day. The reticulocytes reached a maximum of 8·7 per cent. on the ninth day; 31 days later the red cells were 5,100,000 per c.mm.; hæmoglobin, 76 per cent.; colour-index, 0·74; white blood-cells, 2400 per c.mm. Red cell distribution curve: mean diameter, 7·5008 μ;

FIG. 2



variability, 8·7 per cent.; megalocytosis, 1·0 per cent. There was associated clinical improvement.

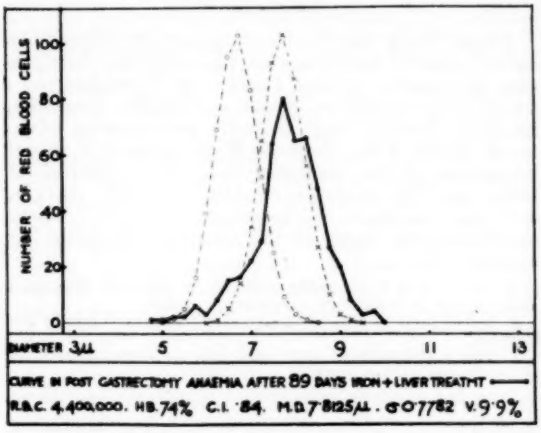
CASE 3.—A married man, aged 44, a chauffeur. (U.C.H. Reg. No. 2157/28.) In 1908 he had an operation (gastro-enterostomy) for gastric ulcer at St. Mary's Hospital. In 1916 he had malaria, and in 1928 he was admitted to University College Hospital under Mr. Gwynne Williams.

Clinical examination.—Patient is very pale, and appears to be rather wasted. Tongue clean. Teeth, dentures.

Abdomen, slight epigastric tenderness. Heart, lungs, and central nervous system normal.

Special examination.—Fæces: occult blood present. Blood count: red blood-cells 2,480,000 per c.mm.; hæmoglobin, 35 per cent.; colour-index, 0·5; white blood-cells, 8200 per c.mm. The appearance of the stained films was typical of that seen in idiopathic microcytic anæmia.

FIG. 3



Operation.—The jejunum beyond the anastomosis was dilated. A large ulcer was found on the jejunum at the site of the anastomosis performed at the previous operation. A mass of adhesions surrounded the ulcer and anastomosis, and attached it firmly to the transverse mesocolon. The old anastomosis and ulcer were excised, and a new anastomosis between stomach and jejunum made.

The stools being free from occult blood the patient was given liver extract and whole liver. The red cells rose to 4,180,000 per c.mm.; hæmoglobin, 42 per cent.; colour-index, 0·51. He felt well enough to carry on his work. The value of high iron dosage was not then appreciated and the effects of such therapy were therefore not studied.

DISCUSSION

The first patient (Case 1) in the present series presented on her last admission to hospital the typical clinical picture of the Plummer-Vinson syndrome, showing dysphagia, glossitis, and severe anæmia. Unfortunately the observation of Graham and Johnson on the increased fragility of the red cells in this condition appeared after the anæmia in the present case had been treated, and it was therefore impossible to make the necessary investigations. The second patient (Case 2) might be considered as an early example of the syndrome in that she showed anæmia, glossitis, and œsophagitis. There are only three other recorded cases of this syndrome with a previous history of gastric operation. Witts (1931) described one typical example which developed in a man after gastro-enterostomy and the formation of a gastro-jejunal ulcer. He also mentioned a woman who had anæmia, glossitis, and occasional attacks of dysphagia following gastro-gastrostomy and gastro-jejunostomy. Davies reported a typical example occurring in a woman of 42, six years after gastro-enterostomy had been performed for gastric ulcer.

Repeated determinations of the blood picture in Case 1 showed that an anæmia may change from a typical microcytic to a megalocytic type within a few weeks. This appeared to result from iron therapy, since, except for unsuccessful attempts to check the diarrhœa by the administration of bismuth, hydrochloric acid, and acidol pepsin, no other therapeutic measures had been adopted. That iron was the effective factor is also suggested by a recent study of red cell diameter in a series of cases of idiopathic microcytic anæmia treated with iron. Price-Jones found that in all cases investigated recovery from the anæmia, after iron therapy, was associated with a shift of the red cell distribution curve from a point to the left of normal to within normal limits. Case 2 in the present paper is an example of such a change. The mean diameter increased from 6·9425 μ to 7·5008 μ. In Case 1 this normal change appears to have been carried too far, giving a definite megalocytosis. Heath has recently reported briefly that iron medication in two sisters changed an initial hypochromic anæmia into one of the hyperchromic megalocytic type. Apart from these cases the only satisfactory recorded instances of the change from a microcytic to a megalocytic anæmia is that described by Witts (1931), and he unfortunately gives no red cell measurements. In this instance the change occurred over a period of six years and was not apparently related to treatment.

It appears, therefore, that iron influences not only the hæmoglobin content of the red cell but also the size as measured by the diameter. Lack of iron may be associated with microcytosis as in idiopathic microcytic anæmia, or with a high percentage of megalocytosis as in erythroblastic anæmia (Bennett, Hunter, and Vaughan). Treatment with iron causes an increase in red cell diameter, and may even induce a megalocytosis as in Case 1. To throw light upon the significance of such variations, further careful studies are needed of variations in red cell distribution curves during treatment, correlated with determinations of cell volume.

It is too soon to determine whether the maintenance of a satisfactory red cell count and hæmoglobin in one patient (Case 1) while taking marmite is of significance. A definite degree of megalocytosis is still present in the case under discussion. Marmite has been shown to be effective in the treatment of certain megalocytic hyperchromic anæmias (Witts, 1930, Vaughan and Hunter). This is probably due to the fact that marmite is rich in the extrinsic factor necessary for the production of the effective principle in liver (Strauss and Castle). Its effect in the present case is being studied further.

CONCLUSION

Since only 122 cases of anæmia following gastric operations have been reported in detail, apart from the present small series, the available evidence is insufficient to allow the conclusion to be drawn that such operations are necessarily followed by disordered hæmopoiesis. It is possible that a hæmatological and statistical study of a large series of cases might show that at least slight degrees of anæmia are more common than appears from a study of the existing material, since Gordon-Taylor draws attention to the fact that in the majority of cases anæmia is present without giving rise to any symptoms. Again, there is not sufficient data available to suggest, in the case of partial gastrectomy, that one method of operative technique is more likely to be followed by anæmia than another. Lublin found anæmia more commonly in those cases in which Billroth II. technique was employed and where the pylorus was closed, and considers some modification of Billroth I. as safer. Morley also favours a modification of Billroth I. method.

That the anæmia in the reported cases is dependent upon the disordered gastric function due to operative interference, and is not merely incidental, is suggested

by the fact that a definite proportion of the cases of hypochromic anæmia occur in men. Idiopathic microcytic anæmia in man is so rare as to be described by Witts (1931) as a hæmatological curiosity.

Of the precise nature of the disturbance of gastro-intestinal function we have little evidence. Achlorhydria does not necessarily result. Lublin, Morley, and Gordon-Taylor all found normal acidity or hyperacidity in a certain proportion of cases even when severe anæmia was present. Lublin reports that more than half his total 98 cases had stools of altered form and consistence. Both he and Gordon-Taylor comment on the increase in fæcal fat. It has not proved possible to correlate the occurrence of anæmia with any specific changes in the fæces. It is interesting, however, that other conditions characterised by faulty fat digestion or absorption are frequently associated with anæmia (Vaughan and Hunter).

Clearly changes in gastro-intestinal function result from operative interference with the stomach, but their relation to hæmopoiesis cannot yet be determined. The results of treatment with liver or iron, according to the type of anæmia present, are satisfactory.

SUMMARY

1. Three cases of hypochromic microcytic anæmia following gastric operations are recorded.

2. In one case, treatment with iron changed the red cell diameter distribution curve within 36 days from one typical of idiopathic microcytic anæmia to one typical of Addisonian pernicious anæmia, though the colour-index remained low.

3. The previous records of 122 cases of anæmia following gastric operations are discussed.

It is a pleasure to thank Mr. Gwynne Williams, Mr. A. J. Walton, and Dr. Donald Hunter for allowing me to make observations upon patients under their care, and Dr. Cecil Price-Jones for his kindness in determining the red cell diameter distribution curves.

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PROSTATECTOMY WITH IMMEDIATE CLOSURE OF THE BLADDER

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APART from the perineal operation, which has never acquired popularity in this country, there are two landmarks in the history of prostatectomy: firstly, the nistitution of the suprapubic operation, by Peter Freyer; and secondly the advance advocated by Sir John Thomson Walker—namely, visual inspection of the prostatic bed, with removal of tags, possibly incision of the posterior margin, and the insertion of hæmostatic sutures. These operations fall short of the ideal in the following respects:—

1. Bleeding is imperfectly controlled. Even in the open operation it is frequently necessary to pack.
2. Infection is inevitable, since an open tube is left in the bladder.
3. The suprapubic wound may fail to close as rapidly as one hopes and expects.

Mr. Harry Harris,[1] of Sydney, Australia, appears to have overcome these objections without introducing any fresh element of risk.

The soundness of the Harris operation must be judged on certain critical points—namely, mortality, morbidity, duration of the illness and convalescence, and technical feasibility.

1. *Mortality.*—Harris's own figures are so staggering as to brook no argument. In a consecutive series of 92 cases 84 were subjected to this technique without a single death. The 9 cases reported here are too few for any definite conclusion to be drawn. There was one death, which will be discussed later.

2. *Morbidity* in my cases may be summarised as follows:—

Bleeding.—Primary and reactionary hæmorrhage are well controlled and secondary bleeding, the sequel to infection, is rare.

Infection.—A small experience confirms that of Harris. The infection is mild, perfectly drained, and has not caused trouble.

Renal failure after operation should not take place in properly selected and prepared cases, except as a sequel to bleeding, sepsis, or partial extravasation due to imperfect drainage. These factors are, probably, of vastly greater importance than has been generally admitted in the past, whilst the prolongation of the operation with the intention of avoiding them is of far less moment than has been supposed, particularly where the most suitable anæsthetic is chosen.

Phlebitis and embolism are to some extent inevitable, but their incidence should be lessened by the greater freedom permitted to the patient whose bladder is closed, and also by the "head-down" position, which lessens the risk of stasis in the big veins of the pelvis.

Remote complications have not been observed.

3. *Duration of the illness and convalescence.*—It is claimed that the duration of the convalescence is much reduced, and in the short series of cases treated this has certainly been dramatically true.

4. *Technical feasibility.*—The one central suture is the only difficulty, and a little experience of bladder surgery, combined with patience, is all that is required.

PRE-OPERATIVE PRECAUTIONS

These investigations and precautions are by now well standardised, and nothing needs to be added with special reference to the operation with closure.

[1] Harris, S. H.: Med. Jour. Aust., 1927, ii., 241; 1928, ii., 288; Brit. Jour. Urol., 1929, i., 285.

Preliminary cystotomies may be regarded as falling into two groups :—

1. Those in which a catheter should be sufficient, but is either difficult to pass, poorly tolerated, or for some other reason unsatisfactory. In these patients a short period of drainage may very likely be sufficient.
2. The really bad risk, the patient who has had a distended bladder and overflow incontinence for months. In these patients a slow decompression of the bladder, spread over several days, may be followed with enormous advantage by an interval of suprapubic drainage occupying weeks or months. During this time an apparatus can be worn and a moderately active life pursued, with the prospect of a complete operation at a later date.

The disadvantage of preliminary cystotomy is twofold in the Harris operation, as indeed in all operations of the open type; sepsis is inevitably introduced, and the approach is more difficult in the second stage. It is an enormous advantage to leave the fistula as high above the pubes as possible, so that an incision may afterwards be carried downwards boldly and safely. I have repeatedly performed the Thomson Walker operation in two stages, successfully and without trouble, and there seems no reason why the Harris operation should not be done at a second stage, although so far I have not had the occasion to try. A long interval between the operations leaves the tissues in a more manageable condition than does a short gap of, say, ten days.

Intravenous urography has, so far, not been very fully discussed in reference to the enlarged prostate. This method is more open to misinterpretation than the older methods as an estimate of renal function, especially in the presence of obstruction, and I have therefore only used it when I had reason to suspect the existence of some renal abnormality. In malignant disease of the prostate and bladder, on the other hand, visualisation of the whole tract, best secured by this method, is an essential preliminary to any operation, especially if transplantation of the ureters to healthy bladder or to bowel is contemplated.

CHOICE OF ANÆSTHETIC

Spinal anæsthesia for abdominal surgery in general is not advocated, but there are many occasions on which its help is enormous, and for some time now I have consistently employed it for surgery of the bladder and prostate. Since using spinocain by the technique described by Wilfrid Adams [1] I have had no alarms and almost uniform satisfaction. In the series dealt with in this way are some ten cases of extensive resection of malignant disease of the bladder, often including a large portion of the prostate and involving the reimplantation of one or both ureters, and in these cases, approached with the greatest trepidation, I have been amazed by the apparently wide margin of safety with which they have all come through the operation. The head-down position is the safest and indeed the most comfortable for a patient under spinal anæsthesia, and I maintain this position for 48 hours after operation, in order to avoid collapse in the early hours from cerebral anæmia due to vasomotor relaxation, and in the later hours to avoid headache.

These observations have led me to think that, at any rate so far as concerns the bladder, the duration of the operation if done under spinal anæsthesia is a matter about which we need not be greatly concerned. Once the dose has been given and the patient put in the Trendelenburg position, so long as anæsthesia continues, the operation may be prolonged almost indefinitely without detriment to the patient.

OPERATIVE DETAILS

First the spinal anæsthetic is given. This is done in the lateral position with the dorsal spine curved over the kidney bridge, so as to make the highest point lie in the mid-dorsal region, the canal running downhill from this point towards the sacrum and the head. About 2·25 c.cm. of spinocain is diluted to 5·0 c.cm. and slowly injected. The stilette is then replaced in the lumbar puncture needle and the upward progress of anæsthesia observed by means of needle pricks. A maximum of seven or eight minutes usually suffices for anæsthesia to reach the eighth or ninth dorsal segment. If the progress appears to be unsatisfactory a further dose may be given cautiously, but it is advisable to wait 15 minutes from the first injection. As soon as anæsthesia is established the patient is put in the Trendelenburg position and the towels arranged with some care so as to make successive layers below the symphysis pubis. In the deepest of these the rectum is approached; in the intermediate layer the penis may be sterilised and later exposed, and the last layer covers the penis.

The first step is an incision ¾ in. long over the external abdominal ring; I then bring up and expose the cord and divide and ligate the vas on both sides; this step, by excluding the possibility of epididymitis, lessens the anxiety of the convalescence. Physiologically nothing is lost, since the ejaculatory mechanism is, in any case, interfered with. These incisions are closed and a long midline vertical incision is made, reaching well down on to the symphysis pubis. This is deepened to expose the bladder, from which the peritoneum is stripped upwards, and into which an incision is made vertically.

The inside of the bladder is now explored with the finger for diverticula, stones, and growth, and the prostate is enucleated. I invariably use a finger in the rectum, and am convinced that the additional help is well worth while. Sepsis is not introduced in this way if two pairs of gloves be worn and an additional sleeve up to this point on the left arm. Enucleation seems easiest by working from within the urethra, and this method has the additional advantage that the urethra itself can be torn through from within at the apex of the gland, so avoiding the risk of avulsing the membranous portion, an accident which is very likely to be followed by stricture. The gland usually comes out in one piece, opened out from end to end, the lateral lobes being united by the middle lobe.

The extra sleeve and additional pair of gloves are now removed and discarded and the open part of the operation commenced. A bladder retractor is inserted and, if necessary, a greater degree of Trendelenburg adopted. A head-lamp is essential unless illuminated retractors are employed. The prostatic bed is explored, residual adenomata, if any, removed, and tags of tissue cut away. Hæmostatic sutures are then inserted postero-laterally at "half past four" and "half past seven." The characteristic part of the operation and the only difficult step follows: the floor of the prostatic cavity is picked up from the depths posteriorly with a pair of tissue forceps, as near the membranous urethra as possible, a special instrument being employed with advantage, and a suture is passed through, embracing the mucous membrane of the posterior lip and the floor of the cavity. This suture, when tightened, draws a tongue of mucous membrane down towards the membranous urethra, and forms an epithelial covering for the floor of the cavity. The penis is then exposed and a No. 8 soft rubber catheter passed into the bladder. In this an additional eye is cut about 1 inch to 1¼ inches from the tip. Next, sutures are placed deeply from side to side of the front part of the prostatic cavity, drawing in a liberal bulk of tissue and approximating the mucous membrane in the midline. Two, three, or four such sutures are employed, and pierce the mucous membrane about ¼ inch lateral to the raw edge in a vertical line on either side. This completes the work on the prostatic bed and covers the floor of the cavity with mucous membrane, upon which the catheter rests, and thereafter obliterates the cavity in front of the catheter. Hæmostasis should by now be almost complete.

A stout silkworm gut ligature is passed through the tip of the rubber catheter and the latter adjusted so that the newly made eye lies at the lowest point just within the bladder. The silkworm gut is brought up through the bladder opening and the bladder closed. I vary the Harris technique very slightly by placing an inverting suture at the lower and upper ends of the bladder incision, and then put in the extended figure of eight suture which he recommends at the centre of the incision. This passes through the right rectus muscle, and then takes up the outer surface of the bladder on the left side far away from the cut edge; it returns to the right side and picks up the cut edge, then the cut edge on the left, then the bladder on the right, far away from the incision, and, lastly, the rectus muscle on the left. When drawn tight this draws the bladder up to the rectus muscle, inverts the bladder wall like a safety inkwell, and approximates the edges of the bladder incision. The silkworm gut from the tip of the catheter comes up through the inkwell and forms a guide for reopening the bladder, should accidental hæmorrhage occur. In such an emergency it is necessary only to pass a finger or sinus

[1] Adams, A. W.: Brit. Med. Jour., 1931, i., 785.

forceps down through the funnel of the inkwell and insert a large tube. Finally, the rest of the incision in the abdominal wall is drawn together in the usual way, except that a slightly larger gap than usual is left on either side of the track of the silkworm gut, the ends of which are fastened over a glass rod. Drainage of the pre-vesical space is not necessary because it is obliterated.

Special instruments.—Harris has slightly modified Young's boomerang needle, and this is the best instrument to use, at any rate for the one difficult suture. With any other needle the placing of this suture may be very trying. For all the other sutures I prefer an ordinary half circle needle in a Thomson Walker needle-holder. A special forceps for picking up the bed of the cavity has been devised by Harris and is a great help, since ordinary tissue forceps usually tear out. It is an advantage to have an instrument with teeth which are not too sharp.

AFTER-TREATMENT

After-treatment is of paramount importance, and to avoid misunderstanding I am more tedious about it than Harris. On the table the patency of the catheter is proved by washing backwards and forwards with a drachm or two each time of antiseptic lotion. For the first 24 hours this manœuvre is repeated half-hourly. The interval is then increased to two hours and continued so for the next five or six days. At the end of about a week the drachm or two of fluid which is returned is found to be a little turbid, and difficulty is experienced. The interval is again shortened to an hour, to avoid any possibility of accident, and about this time it is usually found advisable to cut the silkworm gut, withdraw the catheter, and replace it by a new one. At about the ninth or tenth day micturition usually occurs, and this is encouraged at intervals of two hours, any difficulty being an indication for the reinsertion of a catheter. At any time from the tenth day the patient is allowed out of bed, with a firm binder round the lower abdomen, as the erect posture undoubtedly encourages spontaneous micturition. My patients have been discharged as early as the twelfth day, but some time in the third week is the usual period.

PERSONAL RESULTS

For the purpose of comparison I have collected the records of my last 23 consecutive cases of prostatectomy spread over the past 15 months. Of these, 9 precede the first case in whom I attempted the Harris operation, and of the remaining 14, 9 have been subjected to this technique. The age-incidence is not remarkable in either group; one patient only was under 60—namely, 58—and, with this exception, the cases closed were aged 61, 62, 62, 63, 65, 68, 68, and 69. Their pre-operative condition, complaints, and general condition were similar to those in whom other types of one-stage operation were employed. In 9 patients a two-stage operation was thought advisable. In all except two the second stage was done by the Thomson Walker technique; in the two exceptional cases I contented myself with enucleation and packing the bed, the difficulty of access, bulk of the patient, and general anxiety being all opposed to any further procedure.

In the entire series there were two deaths.

One was that of a patient who, in addition to a prostate, had many stones in his bladder, and who, after having made a good recovery, suddenly relapsed a month from operation, with severe urinary sepsis, went downhill for three weeks, and finally died. This patient had been treated by the Thomson Walker technique, and his death is attributed to some unexpected residual infection leading to an ascending surgical kidney.

The other death was that of a patient, aged 68, who was subjected to the closed operation. Some bleeding occurred on the fourth day, and unfortunately the catheter was withdrawn before I was consulted, thus losing the advantage of the silkworm gut guide. A very capable colleague was kind enough to open up the bladder and put in a large tube, and it was clear that the bleeding had ceased, and had, in fact, never been very extensive. Twenty-four hours later the general condition was good, except for intestinal distension. Whilst talking cheerfully to the house surgeon this patient suddenly vomited and died almost immediately. The only post-mortem finding was a dilated heart. I feel justified in saying that the actual type of operation employed was not the deciding factor in this fatality.

One other patient failed to achieve the ideal in his convalescence. He had had urinary obstruction for many years and the bladder wall was fully half an inch thick, the empty bladder almost filling his pelvis. The prostate was fibrous and difficult to remove, but I completed the required technique and closed him up. It was not surprising to find a leak from the wound at the end of about a week. This was never very troublesome and closed in the ordinary way, the patient being discharged five weeks from operation.

The remaining seven cases have all fulfilled the expectations we had of them. All were up and urinating spontaneously in under a fortnight. One went home on the twelfth day, another on the sixteenth.

A METHOD OF ESTIMATING FAT ABSORPTION IN CŒLIAC DISEASE

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In his Rachford memorial lectures Parsons [1] concludes that cœliac disease is characterised essentially by "defective absorption of fat and carbohydrate, and that of these the defective absorption of fat is of primary importance," and this with few exceptions [2 3] is generally received. Further advances in the study of this condition seem therefore to depend upon the facility with which this fundamental process can be studied in the child with cœliac disease. Such a child is notoriously nervous, often frail, and as a rule is not lightly submitted to the frequent withdrawals of blood which are necessary if the biochemist is to study this process. I have therefore thought it worth while to call attention to a method in which but a single drop of blood is required at a time.

THE METHOD DESCRIBED

This method appears to have been first applied by Brulé [4] in 1910, who used it in the course of his researches into liver function. It was subsequently reapplied in America in 1924 by Gage and Fish,[5] who apparently were not aware of the French work, to the study of normal fat absorption and digestion. The method is dependent on the fact that, as for instance stated by Bloor [6]:—

> "The larger and only traceable part of the fat from the intestine is delivered into the blood stream from the thoracic duct in the form of suspended particles of finely divided pure fat. Traces of soaps or fatty acids have been reported, but these are little more than could be accounted for by the methods of separation employed. This finely suspended fat in the blood is, as far as can be determined, exactly the same as that in the chyle—particles about 1 μ in diameter, vary even as to size, and having a pronounced Brownian movement."

These particles, generally referred to as hæmoconia, but renamed by Gage chylomicra, can readily be seen under dark-ground illumination, and during the past hundred years have frequently been described. Both Brulé and Gage and Fish determined that they appeared in the blood stream after the ingestion of fat only, and the former, together with Lemierre,

Weil, and Laudat,[7] demonstrated the close relationship that exists between the number of hæmoconia and fat absorption as determined by chemical methods.

Brulé, who attaches an almost absolute value to this test for fat absorption, furthermore points out that it has this considerable advantage over chemical methods employed in that it reveals only the fat recently absorbed, whereas the fasting individual, in whose blood no hæmoconia may be visible, may show, on chemical analysis, a high blood-fat level. In conditions in which the blood fats were often held to be high and absorption considered poor, as is the case with cœliac disease, it seems possible that absorption as estimated by chemical means might be partially masked by this high blood fat, and that in such cases this particular property of the microscopical method might prove most advantageous. On the other hand, it is apparent that this method can yield no more than an approximate answer, since the technique I adopted corresponds with that of Gage and Fish, and measured quantities are not employed.

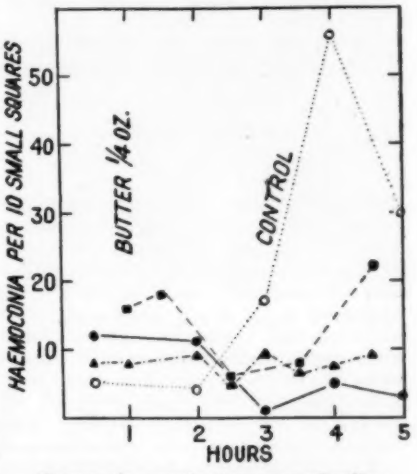
For the count use was made of a micrometer net, as was done by Gage and Fish, which consisted of one square subdivided into 25 smaller squares. In order to achieve some degree of uniformity, counts were made in fields where the red cells were so distributed that while present in the majority of the squares they were absent from five, and the hæmoconia in these five squares were determined. At least 50 small squares were so counted in each determination. In each determination as a control a parallel count was done on a normal child subjected to the same preparation, being placed on a "fat-free diet" 24 hours before the determination was made.

THREE CASES

In June, 1929, I had the opportunity of so investigating two cases of cœliac disease, one at University College Hospital and one at the Hospital for Sick Children, Great Ormond-street. Three years were to elapse before I encountered another case. When these results were compared they were found to have certain features in common, and this, despite the paucity of the cases, has encouraged us in believing that these results may not be devoid of significance.

In the Figure the hæmoconia curve of these three cases is recorded together with one of the control determinations. It is evident that these curves, as indeed those of any blood-fat determination, represent not so much the rate of the amount of fat absorption, as the rate and amount of fat entering the blood stream from the thoracic duct, though even this assumption implies that no gross changes occur to this fat in the pulmonary system before it reaches the systemic system. In these three cases the curve obtained in each case differed from that of the control, which in every case conformed to that of the normal as determined by other workers, in that a slight but definite degree of fat absorption was apparently taking place before the test-meal was given, and secondly in that the administration of a relatively large amount of fat was followed in these three children not by increased absorption, but apparently by a further impairment, so that the number of hæmoconia in their blood became less.

The first abnormality might be held to support the theory that in this disease, not fat absorption, but fat disposal is at fault, but the second abnormality noted not only suggests that this is not so, for the number of hæmoconia are lessened, indicating fat disposal, but strongly supports the general belief that fat absorption is at fault, and furthermore would appear to suggest that this faulty absorption is impaired further, rather than aided, by the presence of an increased amount of fat in the diet. It is more reasonable therefore to consider this first abnormality as being but an expression of this faulty absorption and to explain it on the assumption that, while in the controls such fat as was present had all been absorbed and disposed of overnight, in these children large amounts of unabsorbed fat would still be left and partial absorption still be taking place. I have wondered whether this in itself may not be sufficient to account for the high blood fat as determined by chemical methods in several of these cases; these determinations, like all those I am recording, are as a rule carried out first thing in the morning after a night's fast.



Hæmoconia curve in three cases of cœliac disease and in a normal child.

The assumptions made in interpreting these three curves, while in general accordance with clinical opinion, were such as readily admitted of confirmation; furthermore, it seemed important to determine whether excess of fat alone in the diet could produce impairment of fat absorption, whether this property were shown by protein or carbohydrate as well, or by the mere presence of a meal. Nineteen days elapsed before these tests could be made, during this time the child had been carefully dieted, and was beginning to show definite clinical improvement, his abdomen being less distended, his stools less copious. Though clinical recovery still appeared very remote, fat absorption of a test-meal made in this child, as determined by this microscopic method, now took place apparently as well as in the control. A similar test carried out on a child who for a year had been convalescent, but was still on a low-fat diet, revealed a similar state of affairs. The assumptions made then could not in this case be subjected to confirmation or otherwise, and in addition it appeared that long before clinical recovery has taken place apparently normal absorption of a small test-meal of fat may occur in such a child placed on a low-fat diet.

SUMMARY

Attention is called to a direct method of fat estimation, which, despite certain gross disadvantages, has this advantage that it entails only a minimal disturbance of the child, and probably reveals only the fat recently absorbed.

Fat-absorption curves in three children suffering from cœliac disease are given, and it is pointed out that their paradoxical shape readily admits of explanation if it is assumed that there is impairment of fat absorption, and that this impairment is enhanced by increasing the fat in the diet.

Apparently long before complete clinical recovery

the fat-absorption curve following a test-meal may present a normal appearance.

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Clinical and Laboratory Notes

THE ARREST OF HÆMORRHAGE BY HYPERTONIC GLUCOSE SOLUTION

SOME CLINICAL EXAMPLES

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L. Schönbauer [1] recommends the employment of a 50 per cent. sterile solution of dextrose in distilled water as a styptic. In resection of the liver in animals he was able to show that parenchymatous hæmorrhage was arrested two minutes after applying a swab saturated in the warm solution of dextrose. He also observed that healing was uneventful, and he thereafter used a similar solution in the clinic during operations on the brain and spinal cord, and for arresting hæmorrhage in diathermic resection of the choroid plexus of the lateral ventricles. Parenchymatous cerebral bleeding was arrested in two or three minutes.

There is obviously scope for extending the application of this method. During the past year or two I have had many opportunities for dealing with bleeding or oozing from various surfaces by this method, usually after the failure of others. The results have invariably been highly satisfactory. To begin with the most trivial, there is the inconvenient bleeding following a cut during shaving. This may be arrested cleanly and effectively by applying a swab soaked in a 50 per cent. solution of glucose in water.

Epistaxis, requiring the admission of the patient to hospital because of the severity of the bleeding and the failure of remedies, may be arrested promptly by placing cotton-wool or gauze, soaked in the same solution of glucose, in the nares. Plugging should if possible be avoided, but apposition to the bleeding area is, of course, necessary. Uncontrollable bleeding from the gums after *dental extractions* is quickly reduced and soon arrested when other measures have completely failed. When the cause is *purpura hæmorrhagica*, the same application is, in my experience, the best local styptic treatment. The action is prompt, and is followed by no reaction tending to the recurrence of hæmorrhage.

These tests, with the gratifying results that may be directly observed, have led to my adopting the method for use also in cases of *hæmatemesis*. The advantages are the immediate temporary styptic action renewed on each administration and the absorption subsequent to each administration of valuable calories.

Half an ounce of the 50 per cent. glucose solution is given hourly during the day and at night also during hours of wakefulness. Every hourly administration repeats the temporary styptic action, and during the first day of treatment the patient receives approximately 500 calories in place of the customary starvation. The nutritional benefit to the patient is a material gain in preventing inanition and acidosis. No untoward results have been experienced. I have records of 10 cases of hæmatemesis treated in this way.

I can confidently recommend the use of this method, and I regard its omission as doing less than is easily possible to help such cases towards quick restoration in place of the relative starvation of rectal feeding.

In order still further to augment the calories beyond the 500 given by mouth, rectal glucose saline may of course be given; but this may be entirely dispensed with. Plain rectal salines are occasionally given when dehydration threatens. The customary hypodermic of morphia should not be omitted, although it was not always given in this series.

The glucose solution used was made up from anhydrous glucose in sterile distilled water, but medicinal glucose and tap water should prove no less satisfactory. I have not made use of any flavouring agent. Without risk the addition of a little fresh orange juice might overcome any difficulty a patient finds in taking the hypertonic solution. No such difficulty has thus far been encountered, and patients are grateful and feel better after each administration.

There is no sufficient reason for loading this communication with details of cases. As to the effects on a visible bleeding surface, everyone in practice has abundant opportunities for satisfying himself by direct observation. Arrest of gastric bleeding is not open to proof in this manner. That it is of value in this respect I do not doubt, but the very important matter is that experience shows it does not injure, while from the outset it is providing nourishment, which both directly and indirectly must be assumed as of first-rate importance.

[1] Zentralbl. f. Chir., 1928, lv., 2374.

A CASE OF ECTOPIC PREGNANCY

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I HAVE found no record of any case like the following. A woman, aged 32, and married nine years, was admitted under my care at the King George Hospital, Ilford, on Oct. 15th, 1932, as an "acute abdomen." She gave a history of an operation seven years ago for what she said was an ovarian tumour, after which she had two children, one of which—after a difficult forceps delivery—was stillborn. Two years ago she had a perineal repair for the damage sustained at the confinement.

All went well until she missed a period two months previous to admission. She soon began to have intermittent losses accompanied by cramping pains in the right lumbar region which radiated into the pelvis and vagina. A week before admission these symptoms grew worse, until they culminated in a really severe attack of pain, with some vomiting and several fainting attacks. Her doctor thereupon sent her to hospital. When I saw her she was blanched, almost pulseless, with some air-hunger, and obviously suffering from a large blood loss. She was diagnosed as a right ruptured ectopic pregnancy and operated upon forthwith. The abdomen was full of blood of recent origin, and on the right side, close to the uterus but separate from it, was the ectopic pregnancy, ruptured at one small point. There was no ovary on that side, neither could any tubal structure—such as fimbriæ—be distinguished. The left side was normal in appearance, but the patient's state did not warrant any further investigation than palpation and inspection. The gestation was removed and she made an uninterrupted recovery.

I wrote to the surgeon whom she saw in 1925, and he kindly gave me details of the operation. He removed the right tube and ovary for tubo-ovarian abscess, but although the left side was also involved (to a much less extent) it was left in the hope that it would recover; and in this he was fully justified by events.

There are four points of interest in this history. Firstly, the left tube must have resolved completely, for she had two children after her first illness. Secondly, the ovum, in this last pregnancy, must have crossed the peritoneal cavity from left to right. Thirdly, the implantation occurred in the stump of the right tube, hitching presumably at the site of the original ligature where the tube was removed. Fourthly, the spermatozoon was able to penetrate this obstruction and fertilise the ovum.

I do not think any special technique need be evolved to guard against so rare a happening. It is simply recorded as showing what may be accomplished by a really determined sperm and ovum, and as an object-lesson in conservative surgery as applied to the tubes. The decision to leave the left tube and ovary at her first operation, although they were considerably damaged, has been worth two children to her already.

CONTACT SPREAD OF EPITHELIOMA FROM SCROTUM TO THIGH

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THE following case seems worthy of record because of the extreme rarity of contact implantation in carcinoma, especially from scrotum to thigh.

A miner, aged 60, was admitted to the Royal Infirmary, Sunderland, on August 9th, 1932, with the following *history*.

FIG. 1

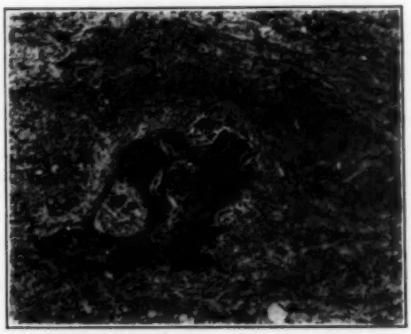
Section from scrotal growth. (× 50.)

Early in May, 1932, he noticed a small pimple on the right side of the scrotum. This caused him no inconvenience, but it gradually grew larger. Thinking it was a "blind boil" he bathed it frequently with hot water. It was only slightly painful; the top was very hard. After about two months he "got the top off it," but there was practically no discharge. A scab formed over it. He took to wearing a linen bag over the scrotum to keep it clean while at work, but left it off when at home. The swelling increased in size, but he continued at work. A week before admission another spot appeared on the inner side of the right thigh where the lump on the scrotum rubbed against it. This rapidly became a hard painless lump in the skin about the size of a large pea, and did not seem to grow further.

He had worked in the pit for 49 years, and, though constantly exposed to coal dust and stone dust, has never worked among pitch, tar, or soot.

On admission the case presented the following clinical features. He was a healthy looking man, and appeared younger than his actual years. No abnormality was found on systematic examination of the chest and abdomen. On the right side of the scrotum, near its lower pole, there was a roughly circular ulcer about three-quarters of an inch in diameter, with hard everted edges, and covered by a scab. The base was indurated but not adherent to the testicle. No hydrocele was present. On the antero-medial aspect of the right thigh there was a nodule in the deeper layers of the skin, hard, rounded, about the size of a pea. This occupied a position exactly coinciding with the ulcer on the scrotum, with the patient standing upright. The epithelium appeared continuous over this nodule, but rather thinner than that surrounding it, as if the superficial layers had been rubbed off. The nodule was freely movable and not adherent to deeper structures.

FIG. 2



Section of growth in thigh. (× 50.)

Operations.—On August 11th the growth was excised, removing an elliptical portion of the skin of the scrotum around it. The nodule on the thigh was also excised; it was picked up with toothed forceps (thereby damaging the surface epithelium probably) and a small portion of the skin excised with it. *Sections* of the tissue from the scrotum showed a typical squamous epithelioma (Fig. 1). Sections of the nodule from the thigh showed an islet of atypical squamous epithelium with cornification and a tendency to cell-nest formation (Fig. 2). It will be noted that there is a marked desmoplastic reaction.

On August 30th the inguinal group of glands on the right side were removed by a block dissection of the fascia and glands from the level of the thigh nodule up to the inguinal ligament. An enlarged gland was found in the deeper layers at the apex of Scarpa's triangle, and this was also removed. It is to be noted that slight suppuration of the wounds had followed the first operation, which might account for some of the enlargement of the glands. The inguinal glands removed by block dissection were examined by numerous sections, but no trace of a malignant metastasis could be found.

Prof. J. Ewing ("Neoplastic Diseases," 3rd ed., p. 86) says that the doctrine of contact infection in carcinoma always arouses legitimate scepticism. The great difficulty is to exclude the occurrence of lymphatic spread. In the case described, numerous sections of the inguinal glands were examined, but no metastases were found. It would indeed be a curious coincidence for a single metastasis to appear exactly opposite the primary growth if spread by the lymphatics. There is the rather remote possibility that a common factor, such as tar or soot, might have produced multiple growths adjacent to each other; but in this case there is no history of exposure to any such substances. It therefore seems that this is a genuine case of transplantation by contact.

We have to thank Dr. Ayre Smith, under whose surgical care this case was, for use of clinical material.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF TROPICAL DISEASES AND PARASITOLOGY

AT a meeting of this section held on Dec. 1st, the chair was taken by Dr. H. S. STANNUS, the President, and a discussion on

Jaundice

was opened by Dr. A. H. MCINDOE. The liver, he said, was physiologically a two-lobed organ. If the vessels were injected, the cast fell naturally into two pieces, the line of cleavage running from the fossa of the gall-bladder to the exit of the hepatic veins and dividing the Spigelian lobe into two. There was no anastomosis between the blood-vessels or bile-ducts of the left lobe of the liver with those of the right lobe, and he showed slides of injected livers which illustrated this fact. The veins of the gall-bladder drained into both lobes, and this explained the bilateral hepatitis which followed infection of the gall-bladder; but thrombosis of the right branch of the portal vein gave rise to infarction of the right lobe only. The right lobe was the site of 80 per cent. of amœbic abscesses and hydatid cysts. He had reconstructed liver tissue through serial microscopic sections by building up a series of wax plates into a model, and had been able to demonstrate that the terminal branches of the hepatic vessels maintained a constant relationship with those of the portal vein, the two groups of vessels always being separated by a mass of liver tissue of equal thickness, the cell mantle. A reconstruction of the liver in portal cirrhosis carried out in the same way showed that this constant relationship was no longer maintained; the vessels were precipitated into the fibrous tissue in the interstices of which lay irregular masses of liver tissue deprived of its normal vascular bed. He showed slides illustrating the effects of obstruction of the common bile-duct by stone and by carcinoma of the head of the pancreas. Obstruction by stone might persist for two or three years without producing much dilatation of the branches of the bile-duct, but obstruction due to pancreatic growths rapidly gave rise to extreme distension of the ducts and their branches and led to acute suppurative cholangitis. In obstructive jaundice changes due to the toxic effects of retained bile took place in the liver cells, and regeneration was almost entirely absent.

Dr. J. W. MCNEE said that the classical theories of jaundice had been put forward by Virchow and Stadelmann; Virchow had classified jaundice as hepatogenous and anhepatogenous. Later the view was taken that all forms of jaundice were obstructive, but clinicians found that there were some cases which would not fit this classification, and began to divide jaundice into obstructive and non-obstructive types. The newer classifications were based on the physiology of bile-pigment formation. Hijmans van den Bergh divided jaundice into mechanical and dynamic types, depending on the differing results of his reaction for bile-pigment in the plasma. This classification had not come into clinical use. Dr. McNee had himself classified jaundice in 1923 as: (1) obstructive hepatic; (2) toxic and infective hepatic; (3) hæmolytic. The introduction of the word "hepatic" was deliberate, to show that in these types the liver was an essential link in the production of jaundice. A case might fall under more than one heading; for example, catarrhal jaundice was of both the toxic hepatic and the obstructive types. Rich, of Baltimore, had classified the condition under the headings of retention jaundice and regurgitation jaundice, with many subdivisions under each. This classification, however, did not help to give the clinician a clear view of his case.

Dr. N. HAMILTON FAIRLEY said that McNee's classification had proved of great value in tropical practice. Amœbic abscesses were usually situated in the upper part of the right lobe of the liver, whereas hydatid cysts were usually found in the lower part of that lobe; *Clonorchis sinensis*, a type of liver fluke, occurred as a rule in the left lobe. This distribution was probably explained by the fact that the blood entering the portal vein from the small intestine, cæcum, and colon passed mainly to the right lobe, while the blood from the stomach and duodenum passed to the left lobe. The infection in the case of amœbic abscess and hydatid was derived from the lower part of the alimentary tract and in *Clonorchis sinensis* from the upper part. He emphasised the importance of investigating hepatic lesions and types of jaundice in tropical countries by modern laboratory methods. Latent malaria might complicate the diagnosis. Obstructive jaundice in the tropics might be due to parasites in the liver or bile-ducts; such obstruction was produced by hydatid cysts, clonorchiasis, ascariasis, and amœbic abscess. Obstructive jaundice was also caused by the tropical forms of cirrhosis, but he did not believe that malaria ever caused cirrhosis, as some observers stated. Congenital defects such as sickle-cell anæmia and acholuric family jaundice gave rise to the symptom. Jaundice of parasitic origin might arise in oroya fever, malaria, bilious remittent fever, blackwater fever, babesia, and septicæmia due to *Bacillus welchii* and hæmolytic streptococci. Various hæmolysins produced jaundice, including colubrine snake venoms; hæmolysis also occurred in paroxysmal hæmoglobinuria and incompatible transfusion. Finally, there were the megalocytic anæmias, but these were not of true hæmolytic origin.

Dr. G. M. FINDLAY said that toxic jaundice might be said to arise when, as the result of damage or functional derangement of the parenchyma of the liver, bile-pigment elaborated in the reticulo-endothelial cells was unable to pass through the liver cells to reach the bile capillaries. Damage to the liver parenchyma might arise from many causes, including poisoning by the halogen derivatives of carbon, such as carbon tetrachloride. This drug was used largely in the tropics as an anthelmintic. In 1919 it had been shown that a fatty diet predisposed to chloroform poisoning, while a carbohydrate diet protected against it; the opposite appeared to be true of poisoning with arsphenamine in dogs. Chloroform, arsphenamine, and mushroom poisoning might all show a delayed action, probably because the liver acted as a secretory organ and the cells were open to attack as long as the poisons were being excreted. The benzene ring had been shown to have a toxic effect on the liver and the quinidine ring might have a similar action; plasmoquine contained a quinidine ring and it was therefore open to question whether this drug should be given over long periods. In 1927 it had been shown that dogs fed on a diet containing bones did not succumb as readily to carbon tetrachloride poisoning as dogs on a diet containing

little calcium. It was essential that patients receiving carbon tetrachloride should take a diet rich in calcium.

Sir LEONARD ROGERS described a case of acute hepatitis in which infection had arisen in the right branch of the portal vein, and the right lobe of the liver was a mass of minute streptococcal abscesses, the left lobe being normal. In a series of 5000 autopsies performed at Calcutta he had never seen a case of malarial cirrhosis, and did not believe in its existence. Kala-azar could give rise to an intracellular cirrhosis and cases of the kind had probably been taken for malarial cirrhosis.

Mr. R. H. PARAMORE thought that congestion of the portal tract might give rise to jaundice in certain cases—for example, following labour; the shutting down of the placental circulation might well occur so rapidly as to give rise to congestion of the portal tract, and this possibly explained why many of the cases of so-called toxic jaundice occurred following labour.

Mr. A. DICKSON WRIGHT mentioned some cases of obstructive jaundice due to invasion of the biliary tract by round worms. In the first case of the kind he had operated upon, the patient died, because, having removed a female worm, he had failed to look for a male worm higher up. In subsequent cases he found that the worms were frequently present in pairs in the duct, and now he always looked for a second worm.

Dr. C. E. NEWMAN said that in hæmolytic jaundice a slight hyperbilirubinæmia with an indirect or delayed van den Bergh reaction was common. Quite possibly the liver was only capable of excreting b lirubin in very small quantities, and any pigment in excess of that amount was retained. The van den Bergh reaction was especially valuable in toxic jaundice; obstructive jaundice of a week's duration might have a high total pigment, but the delayed reaction pigment was within physiological limits; in the toxic or infective types of jaundice the total pigment was just as high as in the obstructive type, but the delayed reaction pigment was increased enormously beyond physiological limits.

Dr. H. W. ALLEN did not share this experience. In a large number of cases of toxic jaundice he found the van den Bergh reaction to be of the direct prompt type.

Dr. E. R. CULLINAN supported Dr. Allen. He showed a table of results of the van den Bergh reaction in cases of obstructive and toxic jaundice, and pointed out that it was difficult to differentiate between the two types of case from the results of the reaction.

The CHAIRMAN mentioned that he had seen ascariasis in this country at the French Hospital.

LIVERPOOL MEDICAL INSTITUTION

AT a meeting of this institution on Nov. 24th, with Prof. R. E. KELLY, the President, in the chair, a paper on a

Suggested Operation for High Gastric Ulcer

was read by Mr. C. A. WELLS. For chronic gastric ulcer, he thought, most surgeons preferred partial gastrectomy where it was possible without undue danger. But with ulcers near the œsophagus all, or almost all, of the stomach had to be sacrificed; the risk was considerable, and the after-history was miserable. In such very high ulcers, any direct attack upon the ulcer was both difficult and dangerous, yet most surgeons were dissatisfied with the results of gastro-enterostomy alone. Hence for this special type of case he proposed removal of the stomach below the ulcer. This operated mechanically by giving free rapid drainage, and chemically by removing a large part of the acid-producing area of the stomach and by introducing alkaline material into the stomach in the immediate region of the ulcer. The operation must be confined to really high ulcers, and he described four cases, the first of which was operated upon three years ago, and the most recent one year ago. Radiograms before operation showed large ulcer cavities, associated with a long history, and radiograms after operation showed rapid emptying of what remained of the stomach and disappearance of the ulcer cavities. The patients were completely relieved of all symptoms, and very well pleased with the result of their operation.

In the discussion which followed, Mr. FRANK JEANS said that excision of an ulcer near the œsophagus was nearly as difficult, in view of the cramped space, as a partial gastrectomy including the ulcer. When he excised ulcers, he always did a gastro-enterostomy as well. He was not so pessimistic about results from gastro-enterostomy alone, although they were, of course, far from perfect.—Mr. H. F. WOOLFENDEN said that Mr. Wells's method of treating high gastric ulcer robbed the surgery of the stomach of its greatest difficulty. He himself had always felt it was wrong to sacrifice the greater part of the stomach for an ulcer the size of a sixpence, and he thought it had been proved that patients who had lost the greater part of the stomach suffered from a permanent anæmia. He had attempted to deal with similar cases by Connell's method of fundectomy.

Sero-diagnosis of Cancer

Dr. E. CRONIN LOWE described a modification of the Bendien reaction which he had employed during the past year. It was essential, he said, to carry out the triple reaction in the case of every serum; varied reactions were obtained by employing portions of each serum in the unheated condition, after inactivation, and after ether treatment. By this modification of the Bendien reaction, malignancy could be correctly diagnosed in 98 per cent. of the earliest cases, and reactions in apparently normal or non-malignant cases suggested the possibility of indicating the presence of a premalignant condition. In several cases the serological observations had given preliminary intimation of recurrence some months before clinical evidence of this was found. Dr. Cronin Lowe thought that in the diagnosis and prognosis of malignancy there was no test so far available which gave such reliable and definite findings as this modification of the Bendien reaction, and that it should prove a valuable means of assessing the results of treatment.

Dr. D. H. COLLINS suggested that the anomalous results obtained in pregnancy were due to the increased lipoidal content of the blood in that condition.—Dr. T. N. A. JEFFCOATE said that the suggestion that the positive reaction in pregnancy was due to the presence of anterior pituitary hormones seemed unsatisfactory, since those hormones, although always found in pregnancy, were only occasionally detected in cases of malignant disease; in those cases the carcinoma usually was situated in the genitalia.[1] It seemed more reasonable to suppose that the positive test in pregnancy was due to the presence in the maternal blood of substances such as fragments of syncytium or foreign proteins from the fœtus.

Dr. T. B. DAVIE said that when the causes underlying the different degrees of precipitation in the three sets of tubes were understood, an explanation might be forthcoming for the present small proportion of discrepancies between the laboratory and clinical observations.

[1] See Jeffcoate, T. N. A. THE LANCET, 1932, i., 662.

GENERAL MEDICAL COUNCIL

WINTER SESSION, NOV. 22ND–26TH, 1932

(*Concluded from p. 1237*)

THE Council's inspectors completed in June last their personal survey of qualifying examinations which began in February, 1930, and the Examination Committee reported to the Council the result of these inspections.

The Qualifying Examination

Prof. J. S. B. STOPFORD, chairman of the committee, presented a summary of the accounts of the inspectors which, he said, deserved the closest study by the Council, by the licensing bodies (many of whom had accepted several of the suggestions), and by the medical public. The remarks of the inspectors on each of the branches of the final examination showed that most of the recommendations adopted by the Council in May, 1922, had been observed, but there were some exceptions. For instance, two bodies did not require an unsuccessful candidate to pursue further study of the subject before he took the examination again. The recommendation which urged that each candidate should be examined jointly by two examiners was not always observed in surgery. Few licensing bodies paid attention to the records of the work done by the candidate during his course of study. The committee observed with satisfaction, however, that every licensing body now insisted upon a clinical examination in midwifery. It was much concerned to find evidence of a frequent tendency to devote inadequate time to clinical examinations. The inspector in surgery found that, as a whole, this was the weakest part of the examination, and that the system adopted by many of the examining bodies created the impression that a thorough investigation of the patient was not necessary. The inspector stressed the advantages of writing a full commentary on the "long case," as in medicine, and the committee felt it important to impress upon the student the necessity for a careful and thorough examination of all his patients. All inspectors commented upon the fact that the examiners did not always see the candidate examine the patient. Most licensing bodies demanded a pass mark in the clinical part of the examination; the committee urged that the existing recommendation to this effect should be strictly followed by all, and commended the allocation of a high proportion of marks to this part of the examination. Most licensing bodies now insisted on completion of the final examination within 19 months, and most refused to permit a candidate to qualify unless he passed in all three branches at the same examination.

TEACHING OF PREVENTIVE MEDICINE

The accounts of the inspectors made it necessary, Dr. Stopford said, for the committee to lay special stress on the attitude of the licensing bodies towards two of the additional resolutions of the Council: attention to the preventive side of medicine, and the application of anatomy and physiology to the official subjects. The report contained the following paragraph:—

> The committee are disappointed at the amount of attention which appears to be given to the important subject of prevention in relation to the teaching of the three main subjects of the final examination. In medicine the reports show that in "a good many instances very little attention was directed to the subject of prevention." The inspector on midwifery, when commenting upon the scope of the questions in the written examination, states "the attention paid to the preventive side is wholly inadequate." The committee feel that the interest which is being manifested in the subject of prevention seems to be rather lukewarm and not in accord with the intention of the resolution on this matter. The committee desire to stress the need for greater emphasis on the preventive aspects of medicine throughout the whole period of study, and are of opinion that greater attention to the subject in examinations would provide an effective stimulus.

SPECIAL SUBJECTS

Another point clearly brought out by the inspections was the heightened influence of written examinations on the teaching of a subject if the questions put were more practical and less a test of mere text-book knowledge. In some examinations each examiner marked only the answers to the questions which he himself had set, but the committee considered that the ideal method was to award the mean of the two marks awarded by the two examiners for the whole paper. Knowledge of so-called minor subjects was tested by very varied methods, often by an occasional or compulsory question in one of the papers. The inspector on medicine strongly urged that more attention be paid to diseases of children. Both this subject and that of mental diseases tended to be excluded from the examinations. In the opinion of the committee this was a serious defect. The inspector on midwifery spoke in very strong terms about the treatment of the subject of infant hygiene in the examination, regarding the attention given to it at present as farcical. He recommended the introduction of a written and a clinical examination in diseases of children, to be conducted by pædiatric teachers. The subject of diseases of children in all its aspects occupied such an important place in the practice of medicine that the committee felt that questions on it should always be set in the final examination. The question which branch should include it might be left to the decision of the licensing bodies, but it should always embrace infant hygiene and an adequate clinical test.

Mr. N. BISHOP HARMAN took exception to the word "minor" subject. Mental diseases, he said, could scarcely be called a minor subject; he suggested the use of the word "ancillary," or "special." He commented on the fact that in no less than seven cases marking was described as "lenient."

Prof. LANGDON BROWN, commenting on the remark of the inspector that in the Cambridge examination in medicine no single candidate was, within his observation, asked to examine a single sample of urine, said that inspectors could not see everything, and that in his nine years' experience as an examiner candidates had always been required to test samples. He said that, although no printed rule existed under which a candidate failed who had not secured half-marks in the clinical part of the examination, such a rule was in fact observed, but that if a candidate had done especially well in other parts the examiners at their meeting might reconsider his clinical marks. The rule had been repeatedly laid down from the chair at examiners' meetings.

SOME CRITICISMS

Sir HENRY BRACKENBURY suggested that Dr. Stopford had passed somewhat lightly over the recommendation that licensing bodies should pay attention to the records of the work done by the candidate during his course of study. He hoped that the Chairman's brevity had not been an indication of the importance which the committee attached to this matter, which he himself considered extremely important. He suggested that, instead of speaking of the "subject of prevention" the committee should use the phrase "these aspects of medicine." The sentence would probably be quoted apart from its context, and many practitioners felt that preventive

medicine was not a subject but an aspect of medicine which ought to be emphasised throughout the whole of the teaching and examination. In a study of the final examination papers set during the last ten years he had found many questions on typhoid fever, which was not now prevalent, and none on influenza, which had become frequent. He believed considerable change in the written papers was necessary; some of the final examinations tended to follow on the old lines and to lose touch with modern conditions of practice.

Sir GEORGE NEWMAN described the report as one of the most interesting, suggestive, and fertile that he had ever seen presented to the Council on the subject of examinations. He agreed with Sir Henry Brackenbury that preventive medicine was perhaps better described as an aspect of all other subjects than as a subject in itself. The attitude of the different licensing bodies to the preventive aspect of medicine as shown in the summaries was most illuminating, and showed that there still existed a definite misunderstanding of what preventive medicine really was. Every subject had a valuable preventive aspect when rightly presented, and if the Council were not careful it would find that it had missed the tide in the teaching of the preventive aspect of medicine. Knowledge and practice were going rapidly beyond these examinations; the student and the practitioner knew this. He asked why the committee, which appeared to feel strongly on the matter, did not make it a subject of recommendation.

Passing to the attention paid to anatomy and physiology in the final examination, Sir George said he had various facilities for studying the work of all the medical schools, and had gained the impression that the clinical teaching was not taking reasonably full advantage of the progress which had been made in physiology and pathology. He hesitated to include anatomy, but said that he would be quite prepared to debate this subject as well. Large sums of money were being spent by the State in investigating physiology, pharmacology and, to a lesser extent, anatomy, and in the last 25 years great advances had been made in these subjects and in the way in which students were examined on them. He doubted gravely whether the ordinary teaching in the wards and in the out-patient departments sufficiently appreciated these enormous advances. In this respect England was falling behind Germany, America, and Denmark. Medicine was a unity, and its practitioners must not split off midwifery or any other of its great arts. There was a unity of medicine which was not only Hippocratic but English, and its tradition was 400 years old. Teachers should beware of being enmeshed, entangled, or misled into anything that conveyed to the student's mind that any particular subject was an entity ad hoc apart from the great philosophy of medicine.

Prof. A. F. DIXON pointed out that two examiners could participate in an examination even though they did not examine the students at exactly the same moment. If any alteration were to be made the Council should, he said, have an opportunity of discussing the matter.

Prof. R. J. JOHNSTONE said that the clinical examination was commonly held in a general hospital to which children were usually not admitted. This might, he suggested, explain why they were little seen in the clinical examinations of some bodies.

DEFENCE OF PRESENT SYSTEM

Dr. LETHEBY TIDY admitted that the English Conjoint Board still allowed a candidate to complete his final examination within 25 months instead of 19, and to make up for a poor clinical mark by excellence in other subjects. The regulations did not, however, operate as badly as they read. He suggested that preventive medicine belonged rather to education than to examinations. In order to prevent a disease it was first of all necessary to know the facts, and the whole basis of examination should be the elucidation of whether a student knew the facts of disease. This was the reason why the preventive aspect of medicine appeared to take a less prominent place than it really did. He hoped that Sir George Newman would have pity on those otherwise brilliant practitioners who were unable, in their 'fifties, to understand the intricacies of modern physiology. The application of an idea must always lag behind the discovery, for discoveries had to be tested thoroughly to establish their validity.

Sir FARQUHAR BUZZARD, defending the clinical teachers, remarked that they had to spend a considerable amount of time, which ought to be devoted to instruction, in the natural history of disease, to teaching students who had passed an examination in physiology and anatomy the ordinary physiology and anatomy of the living human body.

Prof. L. P. GAMGEE agreed that the ordinary student was profoundly ignorant of most of the anatomy which he ought to know, and that there was no time to teach the newer work.

TWO RECOMMENDATIONS PUT TO THE COUNCIL

Dr. STOPFORD, in reply to Sir George Newman, said that the committee could not make a recommendation on this subject without going outside its province. It had stated the case from the examination point of view, and hoped that the Education Committee would take action when it thought that the time had arrived. He agreed to an amendment by which minor subjects should be called special subjects. He then moved a series of proposals recommended by the committee, the first being that those bodies which did not demand a pass mark in the clinical examinations and who did not insist that the final examinations be completed within 19 months should have their attention drawn to the appropriate recommendations of the Council; this was agreed without discussion.

The second proposal was to enlarge the recommendation of the Council that two examiners should always participate in an oral examination, to cover written and clinical examinations as well. The inspectors of all the three branches, said the Chairman, supported the change, and two were strongly in favour of it. One inspector pointed out that a single examiner was very apt to give a borderline candidate the benefit of the doubt, and that candidates had received this benefit twice and even three times. If two participated, the tendencies of examiners towards severity or lenience were levelled and examinations were made fairer; moreover, the junior examiner had greater opportunities.

Mr. JOHNSTONE, seconding, remarked that when an external and an internal examiner worked together, account could be taken of students' previous work and known capabilities, and misunderstanding between an external examiner and a candidate could often be obviated.

Dr. GAMGEE frankly confessed that when examining he had often been misunderstood by the internal examiner as well as by the candidate. He cordially supported the modification, and the Council agreed to it, as it did also to a recommendation that in the examination in clinical surgery not less than half an

hour, exclusive of his interrogation by the examiner, should be allowed to each candidate for his examination of the principal case, and that in all clinical examinations the examiners should observe the candidate examine the patient or that he should demonstrate his methods to them.

THE STUDY OF CHILD HEALTH

Considerable discussion arose over the recommendation that in the final examination there should always be a test of the candidate's knowledge, both written and clinical, in diseases of children, and that this subject should include infant hygiene.

Mr. H. L. EASON wished to substitute the expression "disease occurring in childhood" on the ground that the original phrase had in some schools and hospitals the rather narrow connotation of disease peculiar to children within certain age limits. He felt that it was important that a student should know the diseases of all sorts—medical, surgical, and of special organs—which occurred in children, for if a child could be kept healthy for its first seven years its adult life would cause far less anxiety.

Sir HENRY BRACKENBURY warned the Council against confusion, pointing out that here it was linking infant hygiene with disease in childhood while the report of the Joint Education and Examination Committee linked it with disease in women.

Sir FARQUHAR BUZZARD wished to reject the recommendation, as he feared that it would irritate the licensing bodies and suggest that diseases of children were different from diseases of adults. The qualifying examinations were meant to be a general test; to tell a licensing body that it ought to insert a test on a particular aspect of pathology was a mistake. Every examination in medicine, surgery, and midwifery must contain references to diseases of childhood.

Dr. D. J. COFFEY warned the Council that while at some of the larger centres a complete body of teaching was provided, at others it was not easy to give adequate clinical instruction in disease in children. If the Council made it necessary to hold a clinical examination in a children's hospital, the examination might be unduly prolonged. He preferred to recommend that a question should be set on the diseases of children.

Prof. SYDNEY SMITH said that in his own university there existed a special chair in the subject of child health, and a student had to pass an examination in knowledge of the healthy as well as the sick child before he could go up for his final examination. If it were made obligatory to set one question out of (say) four on a special subject, there was nothing to prevent each of the other three questions being allocated to another special subject until the licensing bodies were given complete instructions for the conduct of the final examination.

Dr. G. H. EDINGTON proposed that the recommendation should read: "That in the final examination there should always be a test of the candidate's knowledge of pædiatrics," but Dr. Langdon Brown objected, arguing, like Prof. Smith, that the next step would be an obligatory question in mental hygiene and in the end there would be no room for general medicine at all.

Mr. ALEXANDER MILES said that he would be very sorry to see the recommendation go out altogether, and suggested:—

"That in the final examination there should be a test of the candidate's knowledge of infant hygiene and of disease in children."

He pointed out that infant hygiene was not a disease of children and that it would be a pity to cut out a policy the Council had been advocating so long: that attention should be paid to the preventive aspect.

Sir FARQUHAR BUZZARD expressed satisfaction with these words, from which Mr. Miles had purposely omitted the "always" of the committee's recommendation.

The Council agreed to the recommendation in this form.

Other Committee Business

Maternal Morbidity.—Prof. J. B. LEATHES, chairman of the Joint Education and Examination Committee, laid before the Council its considered opinion on the report of the Departmental Committee of the Ministry of Health on maternal mortality and morbidity. This report suggested that the Council, having received the reports of the inspection of the examinations in midwifery and gynæcology, now had enough evidence to decide on what action it should take. The joint committee, acting on the very strong dissatisfaction which the inspector expressed with the present teaching of infant hygiene, recommended a modification in the Council's existing resolution on the subject to ensure that considerably more attention should be paid to it.

The New Pharmacopœia.—Sir DONALD MACALISTER, president of the Pharmacopœia Committee, reported that the number of copies sold up to Nov. 19th was over 22,500, with 425 copies of a special large paper impression. This committee desired, he said, to convey their thanks to the Commission, the printers, binders, and publishers, and the Pharmaceutical Society for valuable assistance. The committee had received a report from the Commission that from its observation of the public reviews and criticisms it was satisfied that the impression created by the Pharmacopœia was favourable. A list of corrigenda was to be published; the research assistant to the Commission was dealing with a number of questions affecting the standards and tests, and clinical, chemical, and pharmacological investigations were continuing. The Council, in adopting the report, agreed to the appointment of the President, Dr. Tidy, Sir Farquhar Buzzard, and Dr. Leathes as its members on the selection committee which is to nominate the next Pharmacopœia Commission.

Sir DONALD thereupon resigned the chairmanship of the Pharmacopœia Committee, which he had held for 32 years, and Sir Henry Dale was elected chairman in his place. A resolution was carried by acclamation recording the Council's indebtedness to Sir Donald for his long, arduous, and efficient services as chairman of the committee.

At a meeting of the Executive Committee preceding the meeting of the Council the Registrar reported that the following names had been restored to the Register, from which they had been erased under Section 14 of the Medical Act, 1858:—

Edward B. Allan, Austin L. Benton, Barnabas M. Bond, Maurice J. Broderick (I), Arthur H. Buck, Frank E. Cave, Charles F. Coxwell, Mrs. Gladys Danby, Henry B. Ellerton, Griffith Griffiths (S), Tillson L. Harrison (Col), Harold L. James, William A. McDowall, Hamed Mahmud (S), John Patrick Marren (I), Myer C. Myserson (I), Florence Joseph O'Driscoll (I), Joseph H. F. Perras (Col), William H. Rayner, Claude B. Tudehope (S), Patrick J. Wallace (I), and Pearey L. Whig (Col).

WALSALL CONTRIBUTORY SCHEME.—The contributory scheme of Walsall General Hospital, which was started in July, already has 641 affiliated firms, and in the first full quarter has been able to pay 56 per cent. of the cost of its contributors treated in voluntary hospitals.

REVIEWS AND NOTICES OF BOOKS

The Treatment of Syphilis

By JAY F. SCHAMBERG, A.B., M.D., Professor of Dermatology and Syphilis, University of Pennsylvania; and CARROLL S. WRIGHT, B.Sc., M.D., Professor of Dermatology and Syphilis, Temple University, Pennsylvania. London: D. Appleton and Co. 1932. Pp. 658. 42*s*.

THE 33 chapters of this volume deal chronologically with the progress and development of syphilotherapy since the disease was first recognised in Europe at the end of the fifteenth century. This is not to suggest that the authors have set themselves only the task of compiling a mere historical survey. The work is a methodical treatise, and is a readable summary of the present status of what has become—mainly through Ehrlich's discovery—one of the most fruitful and potent sources of medical inspiration. The first seven chapters are concerned with mercury, its method of action, and the technique of administration, by inunction, by intramuscular and intravenous injection, and by the mouth. A very full account of the toxic effects, in Chapter 7, contains some excellent photographs of the commoner mercurial eruptions. The following two chapters are devoted to a consideration of the value of bismuth, which by general consent throughout the world is now regarded as a much more powerful agent than mercury, and is of especial value when there is an intolerance to the arsenicals. The credit for this development belongs to Sazerac and Levaditi, and since their publications, which began in 1920, first drew attention to the possibilities of bismotherapy, hundreds of preparations of the metal, soluble and insoluble, organic and in mineral form, have been prepared and are constantly being tried out. The authors conclude that with bismuth the same method of massive sterilisation cannot be hoped for as may be attempted with the arsenobenzenes, and this opinion will find general agreement.

A similar account, though even more exhaustive, of the historical development, the chemotherapy and toxicity tests, the excretion, and technique of administration of the arsenobenzenes, follows methodically in the four succeeding chapters. No detail, either on the practical or the theoretical side, appears to have escaped consideration. Chapters 14–21 are mainly concerned with the toxic effects of the drug, the factors which influence them, their treatment, and their prophylaxis. Here again the reader will be greatly assisted by a series of excellent and carefully chosen illustrations, for it is notorious that in their early stages the salvarsan rashes may simulate other allergic manifestations of a relatively unimportant type. Considerable space is devoted to a discussion of the probable causes of these accidents in which, as is generally known, the liver and the brain—especially the nuclei of the cranial nerves—may become involved. These "neurorecidives" are almost universally held to be due to spirochætal infection rather than to the action of the drug, by continued administration of which they are relieved or cured.

All the best known of the salvarsan derivatives and substitutes are described and considered in detail, with their special indications and doses, while a special section in Chapter 23 is given to accessory treatments by light, balneotherapy, and the use of sulphur. The practical management of the disease, which includes the tabulated routine of dosage and dose intervals, is preceded by a short disquisition on the personal and social values of prophylaxis. The treatment of asymptomatic (latent) syphilis receives a chapter to itself.

The very real dangers of the all too common policy of laissez faire are illustrated by an actual case in which unsuspected changes of a degenerative type had involved the cerebral arteries in an otherwise apparently healthy subject, who had previously suffered from a nodular syphilide; these brought about his sudden death at the age of 57. In this chapter too the authors discuss the treatment of visceral syphilis in minute detail; ocular, oral, and skeletal lues are dealt with in Chapter 27. The treatment of congenital syphilis, prenatal syphilis, and all the special procedures for the recovery of cerebro-spinal fluid, and the malarial treatment of general paralysis—all these are dealt with in a manner which does credit to the authors and speaks highly for the standards which prevail in some of the American clinics. This is a painstaking work by men with a remarkable clinical experience of syphilis, and with a general knowledge of dermatology, and it will doubtless take its place as a standard work of reference in all English-speaking countries.

Les tumeurs des os

By J. SABRAZÈS, Professeur à la Faculté de Médecine de Bordeaux; G. JEANNENEY, Professeur agrégé à la Faculté; and R. MATHEY-CORNAT, Électroradiologiste des Hôpitaux. Paris: Masson et Cie. 1932. Pp. 437. Fr.80.

THIS valuable monograph is the result of the combined work of members of the staff of the Centre Anticancéreux de Bordeaux et du Sud-Ouest. It deals exhaustively with the benign and malignant tumours of bone, with osteitis fibrosa and allied conditions, and with the metastatic manifestations of malignant disease as they occur in the skeleton. The separate tumours are described under the headings ætiology, pathogenicity, macroscopic and microscopic structure, and mode of growth. The clinical features are then dealt with, and the methods of diagnosis and treatment.

The work is profusely illustrated with photographs of naked-eye and microscopic preparations, and a large number of informing radiographs, each of which is accompanied by a diagrammatic drawing emphasising its significant features. An important feature of the work is the bibliography, which includes upwards of 1000 references. The book is a thoroughly good example of the monograph based on personal experience, and should be of great service to the surgeon and the pathologist. The general format of the volume has the excellence which one associates with the house of Masson.

Psychotherapy

A Search for Essentials. By HANS PRINZHORN, Ph.D., M.D. Translated and edited by ARNOLD EILOART, B.Sc., Ph.D. With an introduction by F. G. CROOKSHANK, M.D., F.R.C.P. London: Jonathan Cape. 1932. Pp. 352. 15*s*.

THE belief in the "psychogeny" of the more obvious symptoms of the psychoneuroses, in their origin because of an experience that breaks through upon the normal, is giving place to the broader conception of a struggle to be passed through in the individual's adaptation to cultural demands. Failure in the struggle leads to a cry for help, and Dr. Prinzhorn examines the foundations, the functioning, and the results of psychotherapy considered as a response

to that cry. He takes his stand upon the psychosomatic unity of the individual, the solidarity of psychotherapy with medicine, and the identification of medicine itself with the whole range of human interests. He looks forward to the return of psychotherapy to the bosom of the profession, whilst admitting that the physician is rare who can judge of its possibilities in an individual case, and he indicates the need for instruction in psychological observation and questioning, with training in practical psychological thinking. He distinguishes between major psychotherapy, the most specialised of all subjects, and that minor psychotherapy which will determine the attitude of every mature physician. Holding that Freud "belongs to the few investigator-thinkers who have added to our mental world something imperishable and unalterable," he sets aside the claims of psycho-analysis to scientific objectivity and stresses the position of the therapist as a mediator, whose personality plays a big part in the treatment.

Under the titles of biology and pathology Dr. Prinzhorn deals with development and adaptation at the difficult stages of life. He emphasises "true constitutional psychopathy," but frankly declines to differentiate it by a symptomatology, appealing instead to his years of experience. Citing the formula of Klages, "Psychopathy is suffering from self-deceptions necessary to life," he believes that the removal of neurotic symptoms leaves the necessity for deception and hence the psychopathy is incurable. With incurability as its sole differentiation, the author's insistence that the psychotherapists who try to cure it are sky-blue optimists, proof against facts, is not helpful. The latter half of the book deals metaphysically, clinically, pedagogically and sometimes caustically, with the aims and possibilities of the therapist. The author's own aim is that of Janet, to set up as goal the optimum suitable to the patient's disposition; according to him the personal qualities of the therapist, together with the craving for relief from loneliness and anxiety on the part of the patient, are the main effective agents in psychotherapy. Medicine should realise the depth of the human problems involved in the task and set to work in the responsible position which belongs to her.

This book is in no way an exposition of psychotherapy; it is an examination of its fundamentals. Every psychotherapist, whatever his theories or methods, should profit by reading it, and the physician interested in general principles will find it stimulating.

Tractatus de corde

By RICHARD LOWER. With an introduction and translation by K. J. FRANKLIN. Being Vol. IX. of "Early Science in Oxford," by R. T. GUNTHER. Oxford: Printed for the subscribers (5, Folly Bridge, Oxford). 1932. Pp. 403. 21*s*.

Dr. Gunther has done a singular service to the study of the history of science and medicine by the series of volumes which he has published under the general title "Early Science in Oxford," as well as by his resuscitation of the Old Ashmolean Museum, as a collection of early apparatus. The present instalment is of particular interest to physiology and medicine. It consists of a facsimile reproduction of the text and plates of Richard Lower's (1631–1691) book "Tractatus de Corde item de Motu et Colore Sanguinis et Chyli in eum Transiti," first published in 1669, with an excellent translation by Dr. Franklin, who also contributes an account of Lower's life. In this last we must confess he has been so anxious to show the setting, remarkable enough, in which Lower lived, that the man himself is a little dim. Lower represents the period in which experiment was replacing imagination; he took part in the first human transfusion, the more readily perhaps because he had already found that a dog's heart still went on beating when its blood had been almost wholly replaced by "beer mixed with a little wine"; and he made a heart-lung preparation to demonstrate the arterialisation of the blood by respiration. He had no means of measuring the rate of the circulation, and calculates from the output of the heart at each beat, the number of beats, and the quantity of blood in the body that the blood circulates about once in ten minutes; the answer was regarded by some of his contemporaries as demanding an impossibly violent and extravagant motion, and he got it wrong because he thought the blood volume to be much larger than it is; no one dreamed then (as few people really realise now) that it really goes round about once a minute. What is so striking in reading Dr. Franklin's felicitous version is Lower's clear-headed handling of such facts as he had rather than his ingenuity in collecting fresh data—a consideration which has perhaps as much application to-day as it had then.

Invention and the Unconscious

By JOSEPH-MARIE MONTMASSON. Translated by H. STAFFORD HATFIELD. London: Kegan Paul, Trench, Trübner and Co. Pp. 338. 15*s*.

THE title of this book whetted an appetite which was left unsatisfied when it was read. It contains no mention of those who in recent psychopathology have been responsible for all that is of value in the thories of the unconscious. Mr. Montmasson divides his subject matter into the physical sciences, biology, morals, and technology, and then deals with a theory of integral knowledge. It has not been denied for many years that the creative activity implied in inventiveness springs from a source below the level of awareness, and that solution of problems and creativeness are reached in some realm, neurological or unconscious, about which the conscious subject can have no direct knowledge. What we seek is enlightenment on the processes in the unconscious that make for inventiveness and the share that deep-seated desire has in the production of new solutions of biological and mathematical problems, and of æsthetic problems too. This book is replete with psychological data which have been coördinated in a disappointing and facile way. It seems to us to add little or nothing to the comprehension of the mystery of human creativeness.

As Shadows Lengthen

By the late R. W. MACKENNA, M.D. London: John Murray. 1932. Pp. 187 and xlvii. 5*s*.

THE sketches of which this small book is made up were contributed by the late Dr. Robert William MacKenna, the well-known Liverpool physician, to the *Cornhill* and various local and Scottish newspapers. They are republished with a short biography attached to them, and will recall to many the author's attractive personality and graceful style. The most considerable item in the collection is a short story entitled "The Eleventh Hour," which appeared in the *Cornhill*; but to most readers the author will appear to be more at home in the briefer sketches. In several of these the reader will be reminded of the thoughtful and sympathetic pen which wrote the "Adventure of Death."

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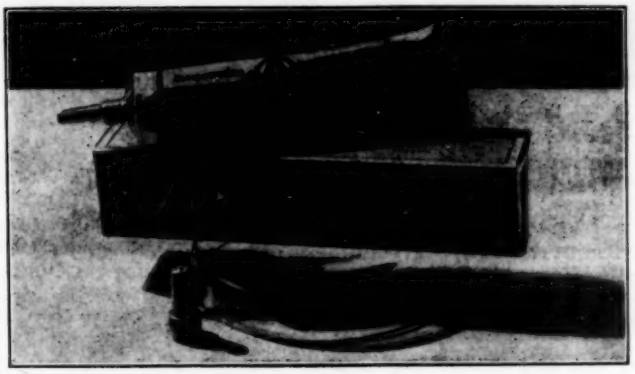

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THE LANCET

LONDON: SATURDAY, DECEMBER 10, 1932

THE BRITISH COLLEGE OF OBSTETRICIANS AND GYNÆCOLOGISTS

THE opening ceremony of the House of the British College of Obstetricians and Gynæcologists was performed by the DUCHESS OF YORK on Monday afternoon last. The dignified procedure confirms the Society in a position already important, and adds to the promise of future prosperity.

Since the date of the incorporation in September, 1929, and after the preliminary arrangements for the management of the College had been made, the Council (elected democratically, we may say, by all the fellows and members of the corporation) has steadily pursued the policy which it laid down, with the general object of encouraging the study and improving the practice of obstetrics and gynæcology, regarding those subjects as interwoven inseparably. The design to elevate the twin sciences of obstetrics and gynæcology to a higher position by providing a better training for medical students in these respects, at the same time instituting severer tests for students desiring qualification, had its origin in the compelling force of the persistently high level of the rate of mortality in childbirth. As public interest in the unfortunate aspects of maternal mortality became increasingly acute, obstetricians and gynæcologists, whose views on the situation were being more frequently demanded, came to the conclusion that they had no organisation capable of functioning as an authoritative body, and very little influence that could be used in a united manner to improve the general study and practice of their subjects. They shared with the physicians and surgeons the responsibility of teaching and examining students, but they could not use any corporate influence to effect reforms which they might hold very necessary in the public interest. The actual starting of the College was not accomplished without much hard work and delicate negotiation on the part of the protagonists of the movement, but the difficulties which have now been surmounted need not be recounted. The College to-day takes its stand on the need to secure an effective organisation which should represent the whole body of obstetricians and gynæcologists; it has made a good beginning, while the circumstances that led to its foundation remain in undiminished force as a stimulus to its energies.

From the first a College House in London was held necessary to central organisation, and the recent purchase of 58, Queen Anne-street has been rendered possible by an anonymous person who has lent the College the sum of money necessary. Interest on this will be paid to him during his lifetime, but he has bequeathed the house to the College free of death duties. In the result the College obtains, for an annual rental quite disproportional to the style and amenities of the building, a dignified home which will one day become its property without encumbrance. The formal opening of this building is a substantial step forward on which those who have worked with such single-heartedness for the establishment of the corporation may be warmly congratulated.

THE FUNCTIONS OF TUMOURS

NOT very long ago teachers of pathology were rather hard put to it to prove to their students that tumours might resemble normal tissues in function as well as structure. The secondary growth from the carcinoma of thyroid, which preserved the patient from myxœdema when her thyroid was removed, was the classical example; almost the only other clear case was the accumulation of bile in the cells of liver tumours which, if it did not show, as was then thought, that the tumour cells could make bile, demonstrated that they could do more or less what normal liver cells do. Mice added a glycogenic tumour to the meagre list. But in recent years one example after another of functioning tumours have come from the ductless glands which have the peculiar relation to the rest of the body that too much is often as bad as too little, differing in this way from such organs as the liver and kidney in which too much is simply superfluous and is presently discarded. Tumours of the anterior lobe of the pituitary may cause acromegaly or gigantism, of the suprarenal cortex premature sexual development or the masculinisation of women, of the parathyroid excessive mobilisation of calcium and osteoporosis, of the islets of Langerhans too much insulin with hypoglycæmia and its attendant symptoms. A good example of this last condition is described by Dr. W. G. BARNARD[1] from the L.C.C. central histological laboratory. A woman of 40 had attacks of feeling "vacant" and faint, and finally fell into coma; her blood had only 0·02 per cent. of sugar, and she was restored by the free administration of glucose, and left hospital. When next seen she was again comatose, and developed a fatal broncho-pneumonia. Post mortem a small round tumour about ½ inch across was found in the head of the pancreas and projecting into the connective tissue between it and the duodenum. Microscopically it showed the typical structure of islet tissue. The practical importance of the discovery of these associations is that the conditions may now be diagnosed, the tumour removed, and the patient recover; and this has actually been done in a number of instances, though it would obviously not have been very easy in Dr. BARNARD'S case. Their theoretical interest is to emphasise the gradation between

[1] Jour. Path. and Bact., November, 1932, p. 929.

normal and tumourous tissue, and to make it more plain that incoördination with the rest of the body is the first degree of abnormality which identifies a lump as a tumour. Some tumours of these ductless glands, while still fairly normal in structure, have gone so far along the wrong road that they no longer produce the characteristic internal secretion—e.g., the parathyroid tumours described by Prof. G. HADFIELD. Finally, the anatomy and histology become grossly aberrant, and with that the tumour generally becomes frankly malignant and usually functionless.

THE NUTRITION OF THE SCHOOL-CHILD

ALL would agree that the last person to suffer from the present economic difficulties should be the growing child. In his latest report[1] as chief medical officer of the Board of Education, Sir GEORGE NEWMAN defines a healthy child as one whose growth is proceeding naturally, whose nutrition is normal, and whose bodily systems are functioning without impairment; and the signs of health as growth, physical activity, and efficiency and happiness. It is becoming generally recognised, he says, that the education authority is as much concerned with the education of the body as of the mind, and that the essential requirements for health are food, air, exercise, rest, cleanliness, an active and occupied life, "to know thyself and be moderate." From the medical standpoint it is necessary to recognise as early as possible any departure from the normal. The school medical inspections already do much to this end, but Sir GEORGE NEWMAN urges school medical officers to study the child at work and play as well as in the few minutes allotted to direct inspection, proposes that nurses might test vision and hearing at periods intermediate between the routine medical inspections, and returns once again to the very important pre-school period when the seeds of so much future disability are sown. A special investigation of nearly 3000 children under five has shown that 27 per cent. suffer from defects which indicate an inadequate arrangement for care and treatment. It is significant that over half of these had never attended an infant welfare centre.

Of late years the education authority has played an increasing part in providing children with food, and last year 48 million meals were given to 320,000 children by 157 authorities. Of the cardinal factors that affect the health of the growing child, food is of especial significance—and at no time more so than in a winter of economic distress. Sir GEORGE NEWMAN suggests that the midday meal provided at school should cover two-thirds of the necessary daily supply of the essential factors, while for ill-nourished, delicate, and necessitous children the whole daily supply should be contained in the one meal, trusting the home only for extra quantity and not for any extra quality. Besides actual food, authorities must consider the best way of providing variety, proper cooking, and adequate service. In practical terms, two-thirds of the animal protein needed by the child will be supplied by a pint of milk, four ounces of beef, six ounces of mutton, four and a half ounces of cod or herring, or two and a half ounces of cheese. For fat, rather more than an ounce of butter, dripping, or lard will be sufficient, and the vitamins can be supplied in the milk or butter or by using vitaminised margarine, or by giving raw vegetables and fruit. In the early days of charitable feeding, soup used to be the staple commodity provided, but soup cannot be relied upon for supplying the essential animal proteins; the vegetable proteins in peas, beans, and lentils can supplement these but cannot take their place. Sir GEORGE NEWMAN indicates 5*s*. 6*d*. per head per week as a fair average cost of the food of a child in an institution.

If the children are living an institutional life it is better for them to have their milk at the morning and evening meals rather than in the middle of the day, but for day scholars the authority needs to make sure that the milk is given while the children are under its care. A valuable development of late years has been the "milk club" run by the National Milk Publicity Council. For the cost of a penny a day, a sterilised bottle containing two-thirds of a pint of milk, with a straw for drinking, is provided all the year round. These clubs have been formed in about 150 areas, and are mostly self-supporting, though local authorities help if the parents are unable to afford the penny.

[1] The Health of the School-child. Annual Report of the Chief Medical Officer of the Board of Education for the Year 1931. H.M. Stationery Office. 1932. Pp. 156. 2*s*. 6*d*.

FOR OUR KITH AND KIN

DURING the past few years it has been customary for the Royal Medical Benevolent Fund to make a Christmas present to all its annuitants and to the poorest of its grantees. This year it was hoped to allot 30*s*. to each of these; Sir THOMAS BARLOW, however, tells us that the response to his appeal has not yet been sufficient to make this possible and that some of them may have to go without a Christmas gift. There is still time to send a donation to the hon. treasurer of the Fund at 11, Chandos-street, London, W.1, and no fear that the money given will be used up in administrative expenses. The last Christmas appeal realised over £220 at a cost of £3 18*s*. 1½*d*. To many a widow or daughter of a medical practitioner the Fund is only able to double the old-age pension and it needs little imagination to see how welcome help at Christmas must be to those who have to live throughout the year on a pound a week. But it is not only the special gift which should be thought of in these hard times, but rather the regular subscription which would enable the Fund to assist adequately all who apply for help. The chairman of the Fund's case committee tells us that only one thing is needed—namely, the goodwill and practical coöperation of members of a profession "not without some reputation for practical sympathy with misfortune"; but it is a fact that the amount contributed by the 55,000 registered practitioners

for medical benevolence during the year barely exceeds 3*s*. 6*d*. a head. A subscription from each of one guinea a head would put the Fund on a safe basis, and those who are willing to sign a form of agreement to pay such a subscription for a period of seven years can have the satisfaction of knowing that there will be no deduction for income-tax. Elementary school teachers, we are told, subscribe to corresponding organisations three times as much per head as do doctors, and we may echo Dr. ALFRED COX's petition not for mass charity, but for people to put their hands into their pockets and give something that would mean a real sacrifice on their part.

ANNOTATIONS

THE MEDICAL CURRICULUM: UNIVERSITY OF LONDON CONFERENCE

THE medical curriculum has been receiving public attention during the past year, the fact that the training of students is causing anxiety in all the medical schools and in the central educational authority, the General Medical Council, becoming common knowledge. The Board of the Faculty of Medicine of the University of London had under its consideration recently a number of requests from various sources for modification in the curriculum, and as all the metropolitan medical schools are constituent colleges of the University, any action taken by the University is of first-class significance. In view of these requests the then Dean of the Faculty of Medicine asked the Board of the University to consider whether the different parts of the curriculum should be dealt with separately—that is to say, whether the particular requests should receive answers of particular sort, or whether the time was ripe for a review of the whole curriculum. A committee was appointed to consider this question, and advised the Board that there was sufficient general dissatisfaction to justify the whole curriculum being passed under scrutiny. It will be remembered that at the University of Cambridge [1] the medical studies of the University underwent a close survey in the summer, with the result that certain critical recommendations were made, and at the same time from other sources there came expressions of dissatisfaction of various sorts with the medical curriculum. Accordingly the Board of the Faculty of Medicine of London University recommended the institution of a committee of inquiry having the possible revision of the whole curriculum as its object, and a resolution in the following terms was adopted by the Senate last June:

"That the Universities of Oxford and Cambridge and the Royal College of Physicians of London and the Royal College of Surgeons of England be invited to appoint representatives to confer with the University of London to consider the defects of the medical curriculum and to make suggestions for reform, and that the Board of the Faculty of Medicine be asked to nominate not more than four representatives to attend the Conference."

Invitations were issued to the Universities and Corporations in the terms of the resolution, were accepted, and the following representatives appointed:

University of Oxford.—Sir Farquhar Buzzard, Regius Professor of Medicine at the University; Dr. M. H. MacKeith; and Mr. W. H. Ogilvie.

University of Cambridge.—Dr. W. Langdon Brown, Regius Professor of Physic at the University; Prof. H. R. Dean; and Dr. A. E. Clark-Kennedy.

University of London.—Dr. A. M. H. Gray, Dean of the Faculty of Medicine of the University; Prof. C. A. Lovatt Evans; Prof. G. E. Gask; and Prof. Winifred Cullis.

Royal College of Physicians of London.—Lord Dawson of Penn, President of the College; Dr. Raymond H. P. Crawfurd; and Sir Ewen Maclean.

Royal College of Surgeons of England.—Sir Holburt Waring, President of the College; Mr. E. L. Pearce Gould; and Prof. William Wright.

The constitution of the conference has been arranged so that varying grades of seniority in the profession should be represented, as well as different teaching schools, ensuring that various aspects of knowledge and experience should receive attention at the deliberations. The first meeting of the conference was held on Dec. 1st, and was preceded by a luncheon, when the Vice-Chancellor of the University of London entertained the representatives of the Universities and Colleges, the Principal of the University, and one or two other guests. An executive committee was set up with instructions to gather information and hear witnesses, enabling later discussion on matters of broad policy to take place.

[1] THE LANCET, July 30th, p. 256.

ACUTE LARYNGEAL OBSTRUCTION

ACUTE laryngeal obstruction, in the young child especially, leads to a suspicion of diphtheria; but exact diagnosis may be difficult or impossible by ordinary clinical methods. The use, in some fever hospitals, of direct laryngoscopy combined with the bacteriological examination of swabbings from the larynx not only enables an exact diagnosis to be made but also, as W. T. Benson [1] points out, permits of a decision as to the most appropriate form of treatment to be adopted in any particular case. D. M. Tolle,[2] in an analysis of 344 cases of "croup" admitted to the Willard Parker Hospital, New York, showed that direct laryngoscopy and cultures confirmed the diagnosis of diphtheria in 212 (61·6 per cent.). Catarrhal laryngitis was the cause in 126 (36·6 per cent.) of the cases in the series, whilst in the remaining 6 cases (1·7 per cent.) the obstructed airway was due to foreign body (2), retropharyngeal abscess (3), and polyp (1). Fortunately, from the point of view of diagnosis, laryngeal diphtheria is in most cases secondary to a focus elsewhere. In Tolle's series of 212 cases the membrane was confined to the larynx in only 49 (23·1 per cent.). When the primary focus is tonsillar and typical membrane can be seen, the diagnosis of the laryngeal condition can rarely be in question, but in young infants a tonsillar localisation is not common. The primary focus may be nasopharyngeal and thus escape detection. Again, as Benson observes, certain coccal infections are occasionally met with in which laryngeal symptoms are associated with a deposit on the fauces.

In a recent report upon 51 cases of acute laryngeal obstruction from which diphtheria could be excluded, C. L. Thenebe [3] states that in some the virus of the common cold and in others the streptococcus appears to be the primary ætiological factor, although secondary invading organisms are often present. With the laryngoscope, hyperæmia and œdema—the latter often increasing rapidly—are to be seen. Exudate or membrane is only rarely present. The symptoms may quickly advance and cause death in 16 hours. Thenebe thinks that fat children with

[1] THE LANCET, 1931, ii., 956.
[2] Amer. Jour. Dis. Child., 1930, xxxix., 954.
[3] New Eng. Jour. Med., Oct. 27th, p. 740.

short necks seem to be more prone to develop the condition. This is by no means a new clinical observation. In some of his cases a previous history of eczema and bronchial asthma was obtained, while instability of the nervous system was also a factor. The appropriate treatment of non-diphtheritic laryngeal obstruction of bacterial origin depends upon what the laryngoscope reveals. Medical treatment may suffice or some form of operative procedure may be called for. In that case there is a choice of laryngeal suction or aspiration, intubation, tracheotomy, or a combination of these measures. In Thenebe's series, 23 cases were treated medically; all these recovered. Four were intubated with 3 recoveries; whilst in 3, of which 1 died, a primary tracheotomy was performed. In 21 cases intubation was followed by tracheotomy; 5 of these cases proved fatal. These 21 cases necessitated an aggregate of 50 intubations before tracheotomy. Thenebe considers that an early primary tracheotomy would sometimes have been preferable since it had to be performed in the end. He remarks upon the tenacity of the mucous secretion which sometimes obtains and increases the gravity of the prognosis. Tolle also encountered this type of case in his series of catarrhal laryngitis, the organism most frequently isolated being a hæmolytic streptococcus. Tolle employed suction of the larynx and trachea in cases with secretion alone and followed up this procedure by intubation or tracheotomy in cases with both exudate and subglottic œdema. Steam inhalations were then ordered. Benson found that in laryngeal diphtheria aspiration was indicated when the dyspnœa was due to extensive membrane formation, but that when gross subglottic œdema was the cause of the respiratory difficulty intubation or tracheotomy was necessary.

It is to be hoped that the practice in fever hospitals of direct laryngoscopy will extend. Laryngeal suction or aspiration through the laryngoscope, its possible sequel, although still on trial, has met with considerable success in cases carefully selected by experienced clinicians who are prepared at need to perform an immediate intubation or tracheotomy. By others it should never be attempted.

BECONTREE PROBLEMS

ANY medical officer who saw a great camp growing up at Salisbury Plain or Salonica in the war, and heard Dr. Caryl Thomas give the address, briefly summarised on p. 1314, about the early days of the development of the London County Council's housing estate at Becontree, must have realised how relatively easy such work is in the army. There all who come are under discipline, with their coming notified; no births have to be allowed for and no child population to be guarded from epidemics. The army has to take care there is water for those it sends; it provides food for them, and even doctors, and the sanitary staff sees to conservancy. At Becontree, where 30 new houses went up each week for three years, no one knew the population. It was estimated from the deaths, it being presumed that they occurred among as many people of the same ages as in England and Wales; the subsequent census proved this to have been a close estimate. The population was young; none was greyheaded, so death-rates were low, birth-rates and infectious fever-rates high. Schools were overcrowded, and had to be extended over the playgrounds provided. In the natural course of things preference was given to people employed in London, and they were housed at uneconomic rates; doctors and teachers who were charged economic rates reasonably thought themselves hardly treated. There were many cases of tuberculosis among the incomers, who did not benefit as much as had been expected from the change to rural habitations. There was a shortage of hospital beds. How the local health authority coped with the situation, and what lessons may be learnt from the mistakes made, was clearly set out by Dr. Caryl Thomas, the full publication of whose paper in the Proceedings of the Royal Society of Medicine will be awaited with interest.

ACUTE ABDOMINAL SYMPTOMS IN MALARIA

THE incidence of vomiting or other acute abdominal symptoms in patients suffering from malaria may lead to unnecessary surgical intervention, unless the possibility of their occurrence is borne in mind. Dr. K. P. A. Taylor[1] quotes 25 cases, which occurred within five years in his hospital practice at Havana, Cuba, among which only 3 were true surgical emergencies; 16 showed malaria parasites in the peripheral blood, and 6 had no parasites but responded to quinine therapy. His experience emphasises the paramount importance of blood examination as an aid to diagnosis where any possibility of tropical disease is concerned. Dr. Taylor recognises two clinical signs as suggestive of abdominal malaria: (1) the presence of macroscopic or occult blood in the vomit or gastric contents, and (2) the absence of involuntary muscular rigidity of the abdomen. Most of the patients who exhibited abdominal symptoms had malaria of the æstivo-autumnal type. Other writers have reported the finding of blood in the stools and vomit of malaria patients, but have accepted it as a manifestation of malaria of the algid type; cases of "malarial appendicitis" have also been reported in which true rigidity was observed. Dr. Taylor advises operation only when pain and rigidity are persistent and an increased leucocyte count is found, or when non-filamented neutrophiles are present in the peripheral blood.

THE CONTROL OF DISTEMPER

THE ten-year campaign against distemper, financed by the *Field* and its readers in coöperation with the Medical Research Council, has yielded a rich reward to the subscribers. It is no disparagement of the unparalleled success achieved by Dr. P. P. Laidlaw and Mr. G. W. Dunkin not only in establishing the principles of prophylaxis and treatment, but in overcoming the difficulties of standardisation and large-scale production of the preparations used, to observe that it is attributable partly at least to the circumstances which so greatly favour the worker in veterinary therapeutics as opposed to the physician. The experimental work which led up to the brilliant results recorded in the final report of the *Field* Distemper Council, the bearing of which on allied diseases will be discussed in a future issue, involved the use of a dangerous living virus and was not limited, as would be experimental work on humans, by the fear of fatalities. Indeed, in countries like South Africa, where prophylactic vaccination against various epizoötics is used on a large scale by farmers, a reasonable proportion of casualties is anticipated. Other differences favouring the veterinary worker are the possibility of withholding a remedy from a

[1] Amer. Jour. Med. Sci., November, 1932, p. 699.

control group of animals without violating humanitarian instincts, and the shorter life-cycle of animals which may enable early confirmation of results by repetition of experiments on succeeding generations of any stock. The only danger of the well-deserved publicity given to the completion of such a task within the anticipated limits of time and money would be the assumption that the power to control the incidence and severity of any infection could be achieved if only workers would proceed, like a tram, on rigid lines laid down in advance by their patrons. It will be remembered that trams are obsolescent, and any belief that a driver of a research team can ensure progress in the desired direction by resisting temptation to follow any other may result in the neglect of a short cut. The idea that research on any problem awaits stimulation by a subsidy to ensure concentrated attack is false; the truth is that where the narrowest opening in a dense forest is discernible, workers appear as if by magic to enlarge it. The study of the vitamins is a good example of such concentration; and the despair which attacks workers on cancer after a certain period of effort unilluminated by a flash of good luck shows the reverse picture. When by a happy coincidence, or by good judgment, an adequate subsidy and the right group of men are available at the very time that suitable weapons have also been provided by previous research, such fertile discoveries as the means to control distemper are made.

THE NATURE AND SIZE OF VIRUS PARTICLES

FROM the moment when the bacteriophage was recognised as a biological entity it was evident to bacteriologists that a study of its properties might throw light on some of the problems of viruses. Its effects were easily observed, no difficult and complex animal investigations—with their inherent fallacies—were required, and moreover d'Herelle had founded a sufficient and seemingly accurate technique for the enumeration of the active particles of the agent. This question of particulate nature, or the contrary, has been actively investigated both in the case of the filtrable viruses and the bacteriophage. It has lately become increasingly clear that many of the virus infections are due to particles of an infective nature, and the earlier doubts whether these represented the actual virus particles, or whether the latter were adsorbed on inert precipitates of larger size, have gradually become resolved. For instance, it is generally assumed to-day that the Paschen bodies in vaccinia actually constitute the virus units. These conclusions have been arrived at in the main from filtration experiments, which from their nature are also bound up with the interesting problem of the actual size of virus units. Of late years the method of ultra-filtration, introduced as long ago as 1896 by C. J. Martin, has been very greatly improved and its present accuracy and wide utility is well documented by a recent paper by Mr. W. J. Elford, Ph.D., and Dr. C. H. Andrewes [1] upon the size of the bacteriophage units as estimated by filtration through the graded collodion membranes introduced by Elford [2] in 1931. Using such membranes these workers examined the size of ten strains of bacteriophage. With a knowledge of the pore size of the membranes it was possible to estimate the size of the phage. Under filtration, after an initial phase in which adsorption on the filter progressed actively and with a consequent diminution in activity of the filtrate, the process proceeded normally, giving a fully active filtrate, and was only limited by the size of the pore. Using membranes of progressively diminishing permeability a point was always reached at which the activity of the filtrate was suddenly and sharply reduced. Finally, with a still smaller pored filter, an end-point was reached at which no active phage was passed. By means of this technique it was found that the size of the phage particles differed widely according to the strain, which confirms the now generally accepted view of the plurality of bacteriophages. Within each strain there was a remarkable constancy of size. The smallest of the strains studied was found to have an average size of 8 to 12 $\mu\mu$, whilst the largest measured from 50 to 70 $\mu\mu$. It is interesting to compare these dimensions with those which have been found for virus particles. Generally speaking the bacteriophage units are definitely smaller, with the notable exception of the virus of foot-and-mouth disease which, as determined by J. A. Galloway and Elford,[3] falls within the same range. One other point of interest, and some practical importance, which emerges from this useful paper is that there seems to be a definite inverse relationship between size of particle and size of plaque; small phages producing the largest plaques on agar and vice versa.

[1] Brit. Jour. Exper. Path., October, 1932, p. 446.
[2] Jour. Path. and Bact., 1931, xxxiv., 505.
[3] Brit. Jour. Exper. Path., 1931, xii., 407.

THE INDEX-CATALOGUE

MORE than half a century ago the "Index-Catalogue of the Library of the Surgeon-General's Office, United States Army," began to appear; to-day every medical reader welcomes the concluding volume of the third series of this invaluable directory. The method of the Index-Catalogue has been praised as the ideal for covering the large field of medicine. Not merely does it catalogue under the names of authors all the books in the richest of medical libraries, but under subject headings, placed in the same alphabet as the names of authors, it indexes all the important periodicals, as well as listing the books on each subject. John Shaw Billings, who built up the Surgeon-General's library—till, as Osler said, "there is not a (medical) subject, as there is scarcely an author of note, ancient or modern, not in the catalogue"—realised what a world-wide benefaction his Index-Catalogue would prove; "an analysis by subjects of so large a collection of medical periodicals is necessarily useful," he wrote in his first preface, "in St. Petersburg, for example, as well as in Washington; its measure of utility in any locality being the extent of the collection of medical periodical literature therein." Useful in Leningrad in 1880, it is indispensable in London in 1932. For now in three series, three alphabets that is, we are provided with an index to the medical journals with which our libraries are so well stocked. No city in the world is so rich in scientific books as London, and no great capital so accessible to its provinces. But while our libraries are without coördination and no current catalogues of their books are publicly available, here, like a gift from the gods, undeserved but not unappreciated, comes the key to our treasure. How vast that treasure is we may learn from the figures published in this concluding volume. The three series together have now catalogued upwards of 400,000 items in the "author" series, and listed more than a million and three-quarters of journal

articles. It was indeed fortunate that Dr. Billings set out to index the journals just when the tide began to flood. Our gratitude to him and to his successors is a little tinged with envy when we turn at the end of this volume to the "Collection of incunabula and early medical prints" to find nearly 500 books printed before A.D. 1500 and half as many again from the next quarter-century, with prize upon prize among them. But what more fitting reward could there be for the bibliographers to whom we are so much indebted? No subject has been so well treated bibliographically as medicine, and now we learn that our luck will hold. It was rumoured that the end of the third series was to be the end of the Index-Catalogue, and that after 1926, the last year yet indexed, the deluge would be over us. Now we learn with real gratitude that "work on the fourth series will be begun at once." Dr. Billings lies in the grave, but his great catalogue goes marching on.

ANÆMIA AFTER GASTRIC OPERATIONS

THERE is apparently no gastro-intestinal disorder that may not be associated with anæmia, and evidence is accumulating to suggest that this association is no mere coincidence. Deficient diet, deficient gastric digestion, and faulty absorption in the intestines have all been proved experimentally to play a part in the development of both hypochromic and hyperchromic megalocytic anæmias; while other factors, such as pregnancy, have been shown to have a disturbing effect upon hæmopoiesis, at least in some degree, through their effect upon gastric secretion. Dr. R. A. Rowlands and Dr. S. Lévy Simpson in our last issue, and Dr. Janet Vaughan this week, have reviewed the published records of relationship between gastric operations and anæmia. Though less than 130 cases in all have been reported, it is clear that such operative interference may result in disturbance of blood formation. Dr. Rowlands and Dr. Simpson, writing of Addisonian anæmia, comment upon the long latent period between operative interference and the development of symptoms; the average period in their series was 6 years and the longest 15 years. This may explain why, in a recent symposium on the late results of gastric operation in which a large number of cases was reviewed, post-operative anæmia was only mentioned in order to state that it did not occur. The hypochromic microcytic type of anæmia, unless severe, is rarely a presenting symptom, and careful examination would probably show it to be more common than it appears. Why some patients develop hypochromic microcytic anæmia and others hyperchromic megalocytic anæmia after the same operative procedure is hard to see, and the position is further complicated by Dr. Vaughan's observation on a patient whose anæmia changed within 36 days from a typical microcytic to a typical megalocytic type. At present it is impossible to say exactly why operative interference causes anæmia at all, and the evidence is insufficient to incriminate one type of interference rather than another, though attempts have been made to do so. Cases have been recorded in which the patient was without anæmia six years after complete gastrectomy. There is no apparent relationship between the degree of hypochlorhydria and the severity of the anæmia, nor between the occurrence and character of the diarrhœa and the anæmia. The rapidity with which the food leaves the stomach and the nature of the intestinal flora are also, it seems, without significance. Perhaps a study of the type of diet taken by patients after operation might show that deficient intake of essential substances played a part. Meat and green vegetables, so essential to normal hæmopoiesis, are too often lacking from the menu of the gastric patient. It is obvious that prolonged study of a large series of post-operative gastric cases would be of great interest. Biochemical investigations of the blood, the gastric juice, and the fæces should be correlated with the hæmatological picture and the dietary history.

THE ÆTIOLOGY OF OSTEITIS DEFORMANS

Dr. T. J. O'Reilly and Mr. Joseph Race, F.I.C.,[1] have investigated 30 cases of Paget's disease which found their way, with a diagnosis of rheumatism, to the Hospital for Rheumatic Diseases in Buxton. Forty per cent. of them showed the physical signs of osteitis deformans; 33 per cent. had the symptoms but none of the physical signs; and 27 per cent. had neither symptoms nor signs, the condition being accidentally revealed by radiography. In the first group the average duration was seven years, and in the second group four years; the pelvis was affected in 26 cases and the lumbar spine in 24, while the femur and tibia were both affected more often than the skull. The earliest radiographic change recognised is a coarsening of the bone due to decalcification, which accentuates the normal bone lines and produces an appearance of simplification of the normal bone structure; this was most often seen in the pelvis and vertebræ. The second change is a complete loss of the normal sharp texture of the bone outline, so that the bone looks as though it were seen through ground glass. The third change is a deposition of amorphous calcium salts which spreads throughout the bone like a steamy white cloud, and, becoming dense, obliterates all detail in the radiograms. In the 21 cases where the serum calcium and plasma phosphorus were examined, the figures were within the limits of normal. In every case examined the plasma phosphatase figure was increased. The suspension stability of the blood was normal, except when concurrent disease or sepsis existed, and in O'Reilly and Race's opinion this finding is strong presumptive evidence that osteitis deformans does not belong to the infective group of diseases. They rightly lay emphasis on the work of Snapper and others, which has shown that generalised osteitis fibrosa is a separate affection, with distinct biochemical and radiological findings, having a definite ætiological relationship to tumour of the parathyroid gland and amenable to surgical treatment. (Incidentally, Prof. Snapper's work was done not in Austria, as they imply, but in Amsterdam.)

So much for a carefully conducted investigation of Paget's disease. Turning to another part of their paper, however, we learn that O'Reilly and Race "have not had an opportunity of making a satisfactory histological examination of the bones in this disease." How, then, can they "regard the disease as a local one, primarily affecting the reticular cells of the bones," and having a close relationship to the reticulo-endothelioses and an analogy to Hodgkin's disease? Is this not another example of the error of casting aside years of work in morbid anatomy? Though modern physiological and biochemical methods have served to show that hyperparathyroidism is a distinct entity, different from osteitis deformans, respect is still due to the histologist who finds similarities between the two diseases. In Paget's osteitis deformans there is great resorption

[1] Quart. Jour. Med., October, 1932, p. 471.

associated with great apposition of bone, completely altering the normal architecture; but apposition preponderates. In von Recklinghausen's generalised osteitis fibrosa widespread resorption is the essential, and excessive apposition is focal and relatively insignificant. This seems to be the only definite histological difference. None the less it is, of course, a big difference, and the contention of German-speaking pathologists that "osteodystrophia fibrosa" is a great unity, with many subdivisions such as Paget's disease and von Recklinghausen's disease, seems to ignore what has been discovered through experimental physiology and biochemistry.

It is difficult to agree with O'Reilly and Race in their analogy between Hodgkin's disease and osteitis deformans. Paget's disease and granulomatous inflammations appear to be poles apart. The available evidence suggests that osteitis deformans has a chemical and not an inflammatory origin, and the histologist who assures us that the changes seen in the bones of hyperparathyroidism and of osteitis deformans differ only in degree, leaves us free to hope that the ætiology of Paget's disease is in some way analogous to that of hyperparathyroidism. If Paget's disease be comparable to Hodgkin's disease, then the cause must lie inside the bones. This is unthinkable. The cause must surely be just as much outside the bones in osteitis deformans as it is outside the bones in generalised osteitis fibrosa. We even feel entitled to expect a solution of this problem in that near future when methods of gauging inorganic salt metabolism have advanced beyond the crude standards of to-day.

ASYMMETRICAL BLOOD PRESSURE

It is customary to take the blood-pressure reading from one arm only, and the time involved in making an additional estimation on every patient would be a serious consideration to busy practitioners. Yet if the observations of E. J. Stieglitz and D. W. Probst [1] are of general application, there is a real danger in unilateral estimations, for they found that in 15 per cent. of cases where the reading was taken from one arm only the systolic pressure in the other arm was higher or lower by as much as 10 mm. Hg and 5 mm. Hg diastolic. These findings, which agree closely with the experiences recorded by W. E. Kay and K. D. Gardner in 1925,[2] have been arrived at as the result of the examination of 600 patients, all adults, comprising private patients, dispensary patients, and applicants for life assurance, the age-groups ranging from 18–60 years. The determinations were taken with mercury manometers and repeated readings on the right, left, and again on the right arm were made in all cases of asymmetry of the arterial tension. Such asymmetry is apparently not very unusual, and the teaching that it is limited to cases of aortic aneurysm and trauma will have to be reconsidered. Stieglitz and Probst carried their investigations further and attempted to find what types of cases were more likely to give different readings, apart from such obvious causes as cervical rib, injury to a limb with resulting atrophy, arterio-venous aneurysm, and the like. They found that it was more common in adults with hypertension, and in those showing marked vasomotor instability, sex not being a factor; they showed also that the higher systolic and diastolic readings were generally found on the right rather than on the left side. Since the origin of the pressure is the pumping force of the left ventricle the higher reading is the significant one. The possibility of asymmetry should be borne in mind, especially in examination for life assurance. Serious error may result from an estimation which is just within the normal limits in one arm, if it happens to be 10 mm. Hg of mercury higher in the other untested arm.

The paper describes among others the case of a man, aged 36, in whom at one examination the pressure in the right arm was 170/130, and in the left arm 130/80. A cervical rib was found on the left side. This was removed surgically, and afterwards the asymmetry in the blood pressure gradually disappeared until five months later the pressure in the right arm was 150/85 and in the left 142/86. Stieglitz and Probst endeavour to explain this case by the assumption that the cervical rib, by pressure on the brachial plexus, produced a decrease in the tone of the vessels in the left arm, and that as a result a compensatory hypertension developed in an attempt to maintain an efficient circulation. In the absence of any organic cause the asymmetry in the arterial tension probably tends to be transient, but it may be recurrent, and the suggestion is made that the continued reduction of the arterial pressure in a limb, from whatever cause, may be a factor in the production of "essential hyperpiesia" by producing a prolonged compensatory arterial hypertension.

[1] Amer. Jour. Med. Sci., 1932, clxxxiv., 335.
[2] Calif. and Western Med., 1925, xxxiii., 578.

THE TREATMENT OF BRONCHIAL ASTHMA

It has long been realised that asthma is a symptom or syndrome rather than a disease, and it has been established that the larger proportion of those suffering from this syndrome show a hypersensitivity of the mucous membrane of the respiratory tract to a variety of stimuli. These stimuli may also produce, either independently or in conjunction with asthmatic symptoms, such phenomena as vasomotor rhinitis, hay-fever, and urticaria. As Sir James Dundas-Grant said at a meeting of the section of laryngology of the Royal Society of Medicine last week, "the nasal mucosa is the detonator and asthma is the explosion." Prof. van Leeuwen, of Leyden, who opened the discussion, supported the view that the ætiology of vasomotor rhinitis is nearly always allergic, and said that the white or bluish-grey patches on the nasal mucous membrane characteristic of vasomotor rhinitis were present in 90 per cent. of 200 cases of asthma treated in his clinic. Of these 200 cases 46 per cent. showed abnormalities of the septum, 5 per cent. had polypi, and 32 per cent. showed abnormalities of the turbinates; 26 per cent. had had operations on the nose prior to admission. He had observed that there was generally no direct relation between nasal abnormalities and the asthma, and concluded that as a rule the effectiveness of anti-allergic therapy was not dependent on the nasal condition, though in rare cases an operation on the nose or cauterisation has undoubtedly brought relief. He recommended the postponement of operation as long as possible while specific and non-specific desensitisation was being tried. Mr. Walter Howarth agreed that the results of nasal treatment were disappointing; 10 per cent. of his cases showed improvement after cauterisation, and there were a few definite cures. He was, however, more favourably disposed towards nasal interference in vasomotor rhinitis, in particular the establishment of a free airway and empirical cauterisation. Approaching the subject from the pathological standpoint, Dr. A. F. Wright stressed the importance of secondary bacterial

infection, and suggested that there was no material difference between the cause and treatment of true allergic diseases on the one hand and the acute infective processes on the other; both were due to a loss of power to resist a specific protein or organism, such loss being permanent and perhaps congenital in the first case and temporary in the second. He therefore thought that the right method of attack was on the lines of autoserum therapy. The general conclusion seemed to be that although the treatment of gross nasal abnormalities ought to be undertaken to relieve nasal obstruction, we are at present totally unable to select on any rational basis those few sufferers from asthma and vasomotor rhinitis who will benefit from operative interference with the nose.

THE MEDICAL DIRECTORY

THE eighty-ninth issue of the Medical Directory,[1] which reaches us a good month before the end of the year, contains in its numerical summary food for reflection on the trend of medical practice at the present time. This issue contains 472 more names than last year, an increase not unusual in itself, but whereas the London section has received 239 and the provincial section 700 additional names, Wales is practically stationary, while Scotland and Ireland are diminished to the extent of 238 and 160 names respectively. The tide turned both in Scotland and Ireland seven years ago, but the efflux has now become rapid. The number of those practising abroad was increasing regularly at the rate of about 300 a year until 1931; now there is an actual diminution on last year. The Services list is diminishing somewhat more rapidly than during the last ten years. It is easy to see in what direction the transference of practice is taking place. With regard to the Directory itself there is little new to say because there is little change; no doubt change requires each year more thought where finality has been so nearly reached. The list of special hospitals becomes more useful and complete as time goes by, although here the changed captions have eluded the sub-editor, for those who turn to Asylums and look, at his suggestion, for Insanity will find neither. Recent graduates who do not discover their names in the present list should refer to the Late List on pages 2154–5, which is kept open until the last moment. Both readers and advertisers gain by the insertion of stiff yellow sheets which separate the sections of the Directory. Finally, a section which is midway between text and advertisements cannot go unnoticed, for the illustrated supplement on British spas and seaside resorts has become a magnificent example of what can be done with thought, taste, and wise economy of space. Better paper has made it possible to introduce good process blocks in the letterpress, and the section augurs well for the foundation year of the British Health Resorts Association.

BIOLOGICAL THINKING

ON the eve of a national conference to promote the study of biology, reported elsewhere in this issue, the British Social Hygiene Council published the proceedings of the fifth Imperial Social Hygiene Congress held last year, in the course of which a session was devoted to this important subject. At that congress Major Walter Elliot, who presided, spoke of biology as a cultural subject, indispensable to everyone. As an example of the curious method of approach to the teaching of anatomy and biology he remarked that all the time he was studying anatomy for a medical degree, although he dissected a dead body, he was never asked to look at a live naked man; and in the zoology class the first thing he was taught to do in the study of a frog was to kill it. Sir Arthur Hill pleaded for teaching of the general principles of biology on a groundwork of chemistry and physics in the upper forms of schools as a stimulant to the powers of observation and deduction. Mr. F. Fletcher, headmaster of Charterhouse, quoted with approval a bold proposal that the school course in biology might begin with the biology of man himself, since this study would make a direct personal appeal to boys and girls, and would be of hygienic value. During the past year, Sir Walter Fletcher has argued the case for biological teaching in persuasive terms before the Royal Institution, and now again (p. 1291) we record a renewed demand from educationists for its introduction and pursuit, with the Headmasters' Conference as almost the sole dissenter. We do not altogether share the confidence of several speakers that elementary botany and zoology, or "applied biology" when taught as gardening, will necessarily promote the biological outlook which most medical men, at any rate, regard as wholly desirable. Little girls have long drawn floral diagrams of the natural orders, named inflorescences, and admired stamens and stigma without grasping their germinal significance; and little boys may find in the dissection of small animals a gratification of instincts other than scientific curiosity. It is not only the teaching of accurate observation, or the disentanglement of essential structural parts, but the binding together of pieces of knowledge into a philosophy of evolution that matters. Accurate observation, recognition and graphic reproduction of pattern, manual dexterity, and neatness—these can be taught as well in connexion with other sciences. But biology means more than this, and to expound its meaning we need teachers. The deflection of students from the overcrowded departments of chemistry in our universities to biological study is perhaps the most crying need, and here even those who, like the Headmasters' Conference, deprecate compulsory biology in the schools, will be found willing to do their share.

LEGAL PROTECTION FOR THE YOUNG.—Mr. Frank Briant, M.P. for North Lambeth, was a member of the Parliamentary Committee on the Children and Young Persons Bill, and he assured those present at the fourteenth annual meeting of the National Council for the Unmarried Mother and her Child, held on Nov 30th under the presidency of Lord Gorell, that every detail of the Bill had been discussed with the utmost care, the Committee having met 14 times for the purpose. Though the Act, as passed, was not all that could be wished, it was yet a real advance in legislation for the protection of child-life. The powers of children's courts had been extended to take in practically every kind of neglected child and every form of crime against childhood. Active protection in the matter of guardianship was provided for and the tightening up of conditions under which children may be maintained for reward should do much to deter the less reputable type of foster-parent. Powers of inspection would in future apply to children's homes with sanction to close them or remove the children where this proved necessary. Mr. Briant heartily approved the refusal to insert clauses dealing with illegitimate children in a separate category. From his own experience he knew a number of cases in which, while legally debarred from marriage, a man and woman lived together for many years and successfully brought up a family. It would be hard on both parents and children if those children were to be placed on a special register as illegitimate, giving them the feeling that there was in existence an official record which might at any time be brought up against them.

[1] The Medical Directory, 1933. London: J. and A. Churchill. Pp. 2325. 36s.

SPECIAL ARTICLES

ECONOMY IN THE SOCIAL SERVICES

REPRESENTATIVE VIEWS

WE published last week a summary of the report of the Committee on Local Expenditure, illustrating the many points where the committee's suggestions touch closely on matters of public health and hygiene. A year ago, when a similar situation arose in connexion with Circular 1222 of the Ministry of Health, we were able to publish the immediate reaction to such economies on the part of administrative heads of large medical departments and others holding posts of responsibility.[1] For obvious reasons these views, which were in the nature of first thoughts, were given anonymously. We are doing the same now, and it may interest readers to know that the first three contributions are by the same writers as a year ago and in the same order.

I

What I can usefully say can be put into a few words. The suggestions on public health economy seem to me almost uniformly sound; many of them have already been considered, and in part acted upon, in numbers of areas. But the circumstances of local authorities vary so enormously that a discussion applying to one would feel unreal and unhelpful to another. Three items in the report strike me as capable of misconstruction or possibly harmful:—

1. The reference to the extravagant use of sanatorium beds for tuberculosis. If the committee is distinguishing between sanatorium beds for the early cases and hospital beds for others, well and good. But the implication is not sufficiently clear, and in its absence the discouragement of repeated institutional treatment for the intermediate grade, and of prolonged retention in institutions for the advanced cases might do much harm to the control of tuberculosis.

2. I do not like the suggestion that in the school medical service special research should only be initiated after prior reference to the Board of Education. There is little enough real keenness about research; and to refer it to others, with an inclination towards a superior attitude and a desire to dominate the character of the research, would simply kill that spirit. I am an ardent *dis*believer in mechanised and standardised research.

3. Similarly I think the committee is doing a public disservice by discouraging the M.O.H. from writing as interesting a report as he can. The standardisation applied has already largely done this, and the economy report is finishing the process thoroughly.

II

The report merits the exhaustive summary you gave it if only because local authorities are likely to pay special attention to what is said by a committee representative of themselves. Whether that committee contained members who really understood the problems of the medical services is another question. Although its subcommittees may have "called into consultation members and officers of local authorities who were specially qualified by knowledge or experience to assist on particular subjects," the committee received no evidence from bodies representative of the medical profession or of the public health and allied services. The report is interesting as a reflection of the business man's outlook on problems somewhat outside his ken.

Perhaps the most useful suggestion put forward is that there should be a full inquiry into the operation of the school medical service. Many of us have been puzzled for years at the variation in the provision made and the relative cost of this service in different areas, and the time seems ripe for a careful scrutiny of the facts available. But the committee seems to think a measure of its value should be available in results because the school medical service has been functioning for 25 years. There are, in fact, few areas in which it has been a really effective service for more than about 15 years, and most of the data which might be useful for such an inquiry—viz., the records of sickness insurance—are not available for districts which coincide with local government. One of the reasons given for suggesting economy in the provision of special schools is the decline in deafness and blindness. Did it not occur to the committee that this may be part of the evidence of the value of public health measures, including school medical work, which they are seeking? Nevertheless, I am sure that most public health officials would welcome an inquiry by the staff of the Board of Education, although it is open to question whether the findings ought not to be "vetted" by a competent body with local knowledge, before submission to an advisory body which is no doubt reasonably representative of experts in education but not in medicine. The survey of dental work should be carried out, not by medical inspectors, but by experienced and independent dentists. The committee's comments on research and investigation are singularly jejune. Because every investigation is not productive of valuable results and because "*the same subjects constantly recur*" (italics mine), it thinks that no investigation should be undertaken without the sanction of the Board. It is hard to conceive of any procedure more likely to strangle the spirit of research.

The proposals about housing will not, I fancy, cause much heartburning in the health departments. Many of us have contended that the importance of housing in relation to health has been greatly exaggerated in modern times, probably because of its real association with the epidemic occurrences of a hundred years ago.

On the question of hospitals for infectious disease the committee seems to have been on the whole well advised, but it does not appreciate the measure in which the Ministry's report on scarlet fever was a reflection of views emanating from health departments, nor the extent to which the periods of isolation have been already shortened. Moreover, the committee has overlooked the serious interference with school attendance of contacts which the imperfect isolation possible in working-class homes entails.

On mental deficiency most of us will share the committee's uneasiness over the enthusiasm of the Board of Control. But here, again, it seems to have lost sight of one of the main objects of institutional provision—viz., the training of defectives to fit them for life at home or under guardianship. The assumption "that there is need for greater caution before deciding that a person is mentally deficient" is surely a little presumptuous without special knowledge or wide information. I know no part of our work to which more care and time is devoted.

On the question of institutional construction, I do not suppose the medical profession will cavil at the proposal to hold an inquiry into capital costs. The committee assumes that centralised purchasing is

[1] THE LANCET, 1931, ii., 649.

of established value; this is open to question when the institutional units and population get beyond a certain size. There is some evidence at least that prices do not fall when the goods to be purchased exceed a certain number, and the cost of the maintenance of central stores has to be placed against any slight saving in tender prices. The report also pays lip-service to uniformity in means of collecting patients' contributions, presumably through collecting departments. These in the past have neither been very successful nor economical, and the proposal really adumbrates a perpetuation of the poor-law system as against the use of hospital almoners.

But the most appalling of all the dicta is the suggestion that appropriations of institutions from the public assistance to public health should not be "unduly pressed." The committee seems to speak with two voices, for in another part of the report early diagnosis of cases admitted to hospital is urged in order to reduce the average occupation of beds—the very antithesis of the poor-law spirit. Other references to payment for clinic services reflect the deterrent attitude which public assistance has brought into the mentality of local authorities with the transfer of poor-law functions.

Generally it may be said that the report, from the public health standpoint, is not well informed, that it is for the most part relatively innocuous, but that its serious recommendations are reactionary and would, among other things, defeat the objects of the Local Government Act, 1929, if they were adopted.

III

No report on local expenditure signed by 14 persons of large experience in local administration (even though two-thirds of them make reservations) could fail to contain a large number of suggestions which would be fruitful of economy and which would be freely accepted by their colleagues. It is probable that such a list of suggestions might have been compiled quite easily without the labours of a special committee. Investigations have not been lacking, the Ministry of Health is not without knowledge, local administrators themselves have not been unvocal; and, indeed, machinery for effecting many of the reforms so indicated has been set on foot by, or in consequence of, the Local Government Act of 1929, and in other ways. That there has been much overlapping or duplication of services in local government is a matter of common knowledge, and it is almost a commonplace that much money could be saved by simpler building requirements, by proper costing systems, by collective buying, by coöperation among authorities, by the amalgamation of small institutions or schools, and by the collection of reasonable fees from such of the recipients of some of the services as could afford to pay them. Here is a large field for economy without controversy—or with but little, and that manifestly self-interested—and in so far as the Committee on Local Expenditure have again pointed this out, and have made some detailed proposals for definite action, we may be moderately grateful to them. They have, too, suggested a number of directions in which further inquiries might usefully be pursued, especially with a view to elucidating the causes of apparent anomalies of cost; and in particular have asked for a special inquiry into the school medical service as a whole. This is not untimely, but it may be added that such an inquiry would be the more useful if it included the relationship of the school medical service to other health services, for this is not as close or effective as it should be.

It is only when the committee makes proposals outside these generally agreed or merely doubtful matters that their wisdom will be widely disputed, and that their report will be attacked very strenuously—as on their own showing it well may be—as entirely unrepresentative, extremely hurried, and, in several spheres to which it refers, even ignorant. It will suffice to take three of their major suggestions. In the educational sphere they propose that classes in both elementary and secondary schools shall be made larger, that all advanced teaching to older scholars in secondary or grant-aided schools shall be abandoned, and that grants to universities, technical colleges, and other means of adult education shall be seriously reduced. This would be putting the clock back with a vengeance, and crippling education exactly in those ways and in those directions in which it has been proved by experience to be of the greatest national benefit. It is almost impossible to believe that public opinion will allow such a reactionary suggestion to be acted upon.

Further, in the sphere of mental deficiency the committee shows that it has no real knowledge of the problem which this presents and but an imperfect acquaintance with some of the detailed arrangements for dealing with it. It proposes that steps for ameliorating the condition of feeble-minded persons shall at once be almost completely abandoned, and that many of those who are at present being helped and cared for shall cease to be dealt with. It appears to have no conception of these persons as human beings who have to live their lives, and need help to make such lives good and useful and as far as possible self-supporting. It states that the prime object is the protection of society against them as social nuisances (which the great majority of them are not), and that if they are provided with reasonable food and shelter nothing else matters. Categorically, it is stated that "there is no evidence that more than a negligible number of mentally deficient persons are improved in condition by treatment," whereas, in fact, proper training and supervision will, in the case of great numbers of morons, enable them to become decent citizens instead of deteriorating into mere animals. Should all patients suffering from incurable conditions be put off with mere "decent housing and maintenance"? If not, why should feeble-minded persons alone be denied the "treatment" appropriate for the amelioration of their condition?

Lastly, the committee proposes that the salaries of teachers shall be further and permanently lowered, that drastic and permanent cuts shall be made in the payment of all local government officers and servants, and that the numbers of such officers and teachers shall be materially reduced. Confining attention to members of the public health services, it must be clear that such a policy, applied on such a scale as is suggested, would lead to a definite deterioration of the service. Medical officers, at any rate, would have openings within their profession that would be more attractive, and the status of recruits would alter. We should be back, indeed, in the lamentable condition of things in this respect which existed before the present salary scales were negotiated. To many other important suggestions by the committee the same kind of criticism applies, and it is sincerely to be hoped that there will be no hasty action on many of the matters mentioned in a hasty report.

IV

All who are concerned with the public health services should welcome this report. There has, without doubt, existed in recent years a tendency to enlarge

expenditure for social services on philanthropic grounds, without waiting to test by results whether such expenditure has been efficient and economic. One or two instances may be quoted; the mortality from tuberculosis had been falling steadily and rapidly since the middle of the nineteenth century, before a great scheme of public expenditure in attacking this disease was undertaken in the second decade of the present century; the incidence of the disease has continued to abate, but evidence is lacking that the large expenditure of public money has in any way expedited the fall; further, the incidence of the disease has been falling with equal rapidity in other civilised countries where no such large expenditure in attacking it has been undertaken. During the present century a great fall in infant mortality has taken place, which was, in some cases, too hurriedly ascribed to maternity and infant welfare clinics, until it was noted that in districts where no such activities had been adopted an equal fall in mortality had been taking place.

Multiplication of such facts is unnecessary; but they undoubtedly point to the need for overhauling our national housekeeping in this respect. We are too ready to think we know how to prevent and to cure, and to persuade the legislature, which after all trusts its medical advisers somewhat blindly, to proceed to legal enactments. Meanwhile, as the committee points out, there is no obvious relation in the health services generally between expenditure and results. The object of social services should be to establish an efficient population, quite apart from any philanthropic motives; but this object is lost when the charges placed upon the healthy for maintaining the unhealthy are so heavy as to cause the healthy to be drifting themselves into the ranks of the unhealthy; of this, at the present time, with the present charges upon private purses, there is undoubted danger.

The committee points out many ways in which economies can be effected by close attention to detail. For this reason, if for no other, its report is to be welcomed, more particularly with regard to the establishment and running of public health institutions, such as asylums and hospitals. The time is overdue when all such institutions should be closely inspected, and have their requirements carefully organised on wholesale terms.

THE PLACE OF BIOLOGY IN EDUCATION

DURING a conference organised in London last week by the British Social Hygiene Council, the national and imperial need for a biological outlook was the first subject discussed. Lord CHELMSFORD presided.

NEED FOR A BIOLOGICAL OUTLOOK

Sir MICHAEL SADLER, Master of University College, Oxford, said that biological ideas were seeping into political thought and schoolroom technique, and urged the inclusion of the life-sciences in our conception of a liberal education.

Mr. G. W. OLIVE, headmaster of Dauntsey's School, summarised the obstacles encountered by the schools. The chief of these is to be found in the present examination system; the requirements of the school certificate examination exclude biology though they include chemistry and physics. Moreover, there is a lack of suitable teachers of biology and of laboratory accommodation and equipment. He too believed, however, that the claims of biology are cultural, and that children cannot face the future properly unless they carry away from school some facility for assimilating broad biological principles.

The place of biology in public education was discussed by Prof. A. V. HILL at the afternoon session. It was no longer necessary, he said, to argue in favour of the necessity for teaching science in schools, and there was even a danger of premature specialisation in science, usually in physics and chemistry. He thought that biology should be taught as a general subject to every student, with status equal to that of mathematics, literature, and history, but not greater. One of the best ways of improving the status of biology in schools would be to reform the degree examinations at the older universities. If Cambridge could be induced to insist that no candidate should gain first-class honours in science unless he took at least one physical and one biological subject, and that college scholarship examinations in science should exact the same requirement, reform of science teaching in the schools would follow. The chief hope, however, lay with the local authorities, who would make a great contribution to educational progress if they would see that secondary schools under their control gave biology an adequate place in the curriculum.

BIOLOGY IN THE TRAINING COLLEGE

A session on biology in the training colleges was also held during the afternoon of Nov. 30th. The chairman, Sir RICHARD GREGORY, referred to the opinion of the Prime Minister's committee on The Place of Natural Science in Education, that the teaching of elementary biology should be a part of the normal curriculum of boys' schools, and remarked that it did not seem to have had much effect. Mr. W. K. SPENCER, inspector of science for training colleges, said that biology was the main science taught in training colleges for women, and that a large number of teachers in training for senior schools and most of those in training for junior and infant schools took a course of biology. Since it would be impossible to increase laboratory teaching in the training colleges without throwing an impossible strain on staff and equipment, many principals had arranged a short course of lectures in order that all students should become acquainted with the biological line of thought. The emphasis in such short courses should be laid on biology in relation to sociology. The Rev. R. L. COLLINS, principal of St. Luke's College, Exeter, thought that if biology was to enter into the syllabus of every student at a training college it was best taken as part of the course in hygiene. Miss F. JOHNSON, principal of St. Gabriel's College, London, held the study of biology to be essential to the intending teacher, not only because it formed a basis for sound child study, but because, as a social worker, the teacher needed to be equipped with the basic biological principles. The training college had room for two types of course: (1) a simple course for all students, closely linked with hygiene and child study; (2) a more advanced course for the student who intended to undertake subject teaching in biology in the schools. Miss C. VON WYSS, lecturer at the University of London, thought a biological conception of human nature to be fundamental to a practical philosophy of education; for students in training the study of biology contributed to the culture of mind and body. Miss KATE BARRATT, principal of Swanley Horticultural College, spoke of the extreme importance of a knowledge of biology to the teacher in a country school, where an intimate understanding

of the children and their environment was necessary to success.

On Dec. 3rd a session on biology in the elementary schools was held, with Prof. WINIFRED CULLIS in the chair.

Dr. RALPH H. CROWLEY, senior medical officer to the Board of Education, pointed out that some sound biology was being taught under the title of nature study in many infant schools, while a few secondary school pupils took it as an examination subject; but, broadly speaking, it was still impossible to say that many children left school with any effective understanding of the meaning and significance of life. Quoting from "Science in Senior Schools," published by the Board of Education, he said that out of 584 senior schools no attention was given to biology in 264; the boys' schools for the most part concentrated on physics and chemistry, and the girls' schools on botany. Moreover, for every 100 men teachers who qualified in physical science less than 4 qualified in biology. Mr. G. S. M. ELLIS, educational secretary to the National Union of Teachers, said that the present examination system tended, perhaps, to defeat the real purpose of education, which was to give a comprehensive idea of life. The whole curriculum called for reorganisation along lines which would bring reality into the school; there was no excuse for demanding concentration on prolonged academic exercises from the child. If we meant anything by the phrase "a biological outlook," we should mean that biology interpenetrated the whole curriculum. Mr. F. J. HARLOW, principal of Chelsea Polytechnic, thought there was need for some form of national certification in biology, and advocated the establishment of a recognised diploma.

Among those who quoted their practical experience in the teaching of biology, Mr. H. C. MONKCOM, science master at the Central School, Wells, spoke of the benefit to retarded children which had resulted from giving them a course of applied biology in the form of gardening. Mr. W. J. WHITE, headmaster of Williton C.E. School, Somerset, described an experiment in poultry farming which was run as a profit-making concern among the boys, shares being sold at 1*s*. to raise the funds for the original outlay.

At the afternoon session, Prof. H. A. S. WORTLEY, University College, Nottingham, who took the chair, said that when he talked to children aged 6 or 7, he found their interest in living things to be keen, but at 18 or 19, when they entered college, that interest had evaporated. Not enough was done to foster their enthusiasm in the interval. Prof. DOUGLAS LAURIE put forward a scheme for a biological course designed to meet the needs of children between 11 and 14 years of age. He showed how the study of living things could be made to lead naturally to the study of the physical and chemical laws which governed them.

At a session held concurrently on Dec. 3rd on biology in the public, secondary, and preparatory schools, Mr. W. W. VAUGHAN, lately headmaster of Rugby, took the chair; he pointed out that the standard demanded in the scholarship examinations for Oxford and Cambridge was so high that headmasters were forced to encourage boys to specialise earlier than they would otherwise do. He thought the range of scholarship subjects should be enlarged. Prof. F. A. CAVENAGH, University College of Swansea, thought that a biological outlook was necessary in the human studies of psychology and sociology. Mr. D. WARD CUTLER, Rothamsted Experimental Station, considered that biology was particularly appropriate for teaching in preparatory schools; no one should leave school without realising something about evolution and heredity. Biology formed a sound basis for self-control and good citizenship. Mr. F. B. MALIM said that the Headmasters' Conference would oppose the idea that biology should become an integral part of every boy's education, though they might be prepared to regard it as an optional subject. Mr. K. FISHER, headmaster of Oundle School, said that 40 to 45 per cent. of boys at Oundle did some biology in their early years. The expense need not be great if seasonal material from farms and gardens was used. Miss M. E. MARTIN, headmistress, Girls' High School, Wakefield, said that the curriculum in many girls' schools included: nature study to the age of 10; general elementary science, including chemistry and physics, from 11 to 14; biology from 15 to 16. She referred to the possibility of establishing pre-nursing courses for girls about to enter hospitals, and said that she was convinced of the value of biology, not only for these girls, but for those who wished to take up massage, physical training, almoner's work, health visiting, or the responsibilities of married life. Mr. W. E. NELSON, headmaster of Arden House, explained that the difficulty of preparing boys at preparatory schools for the public school entrance examinations in which no science was included made it impossible to crowd biology into the curriculum, great as he considered its importance to be. Mr. E. G. SAVAGE, of the Board of Education, thought that if the curriculum in schools was too crowded to admit biology, something else should be withdrawn. It was difficult to find good biology teachers. The Rev. STEWART MCDOWALL, chaplain and senior science master, Winchester College, thought it the clear duty of the public schools to give boys education in biology, as a training in citizenship which they owed to society.

INAUGURATION OF AN INSTITUTE FOR THE SCIENTIFIC TREATMENT OF DELINQUENCY

Dr. EDWARD GLOVER took the chair at the inaugura meeting of this Institute, held at University College, London, on Nov. 29th, before a large and interested audience representative of practically every side of social and psychological activity. In opening the meeting, he related that the Institute had arisen from the conviction shared by a number of persons of very varying outlook, sociological, medical, and psychological, that a nation of adults could not continue to deal with its criminological problems by the crude diagnosis and primitive therapy of a two-year-old child, and that the first step to the adequate handling of crime was to eliminate hate, anger, and anxiety from criminological methods. The original members believed that the only practical course was to organise scientific opinion. They had, however, felt that a dozen scientists and humanists could do little, and had decided to collect all the scattered forces of criminology and psychotherapy, together with clinics, out-patient departments, guidance and welfare centres, and legal and Government departments. He warned future members that great sacrifices of time, energy, and scientific priority were needed and that in attacking criminological standards the Institute might be striking at one of the foundations of society. Finally, he said, the Institute would undertake

research not only into what could be done for crime, but into what could not.

The EARL of FEVERSHAM, president of the National Association of Probation Officers, pointed out that the pioneers of the movement had been individuals and bodies with a personal religious motive; those who were now exploring the scientific approach would acknowledge their debt to and their community with these early workers. The Institute must utilise fully the services of the probation officers, who carried out treatment in the offender's own home and possessed most valuable knowledge.

Prof. WINIFRED CULLIS said that the Institute would contribute in no small measure to preventive medicine. There had not hitherto existed a solid body of scientifically trained workers able to carry out such plans as those now put forward.

Dr. J. A. HADFIELD said that many magistrates realised that some of their cases were not fit subjects for punishment but had no other means of treating them. They would be only too willing to coöperate with a body competent to help them differentiate between those who required treatment and those who should be punished.

Dr. J. R. REES doubted whether anyone connected with the Institute would even become unpopular, for he had found among the profession and the public an increasing sympathy and understanding of mental problems and a welcome for those who had read and thought deeply about them. The fundamental requirement of delinquency was treatment. He outlined the work on delinquents at the Institute of Medical Psychology, which had obtained substantial improvement in 60 per cent. of adults and 77 per cent. of children. He pleaded with doctors and magistrates to cast aside their self-importance and bring a sense of humour to the work. The services of a psychiatrist should, he said, be available to every court, and there was need for better-paid probation officers and more psychiatric social workers. Coöperation with medical officers of local authorities' clinics would supply much of the clinic accommodation that would be required. Prison clinics were also necessary; books should be written by lawyers, not doctors, for judges and stipendiaries, and questions on the work should be set in legal examinations.

Canon DONALDSON urged the exponents of psychology to coöperate with the queen of all sciences, religion, and pointed out that the problem of delinquency ran right through the fabric of the State and that every member of the body politic was personally responsible and stood morally in the dock with the prisoner.

Dr. EMANUEL MILLER spoke of the necessity for research into the causes of delinquency, especially environmental. The Institute, he said, would not so much give facilities for treatment as give the public the idea that psychology and sociology had the status to deal with this problem.

Mr. W. J. BROWN, formerly a Labour Member of Parliament, urged the Institute not to be too respectable. It would require for the proper ventilation of its teaching a resolute nucleus inside the House of Commons which would not hesitate to break rules and standing orders in order to call public attention to the necessities of the problem.

The CHAIRMAN, in conclusion, said that the Institute had alternative plans according to the financial support it could enlist: (1) an administrative organisation; (2) a scheme of administration and research combined, with a whole-time director; (3) a central organisation able to finance a diagnostic, research, and therapeutic clinic for special cases that could not be handled elsewhere. If the money were forthcoming, an effective working scheme, lasting two or three years, could be carried out; at the end of that time, if public support did not continue, the Institute would disband rather than linger on wasting the time of its executive staff.

BERLIN

(FROM OUR OWN CORRESPONDENT)

LAPAROSCOPY

Dr. Kalk, assistant to the Medical Clinic II. of Berlin University, lately read a paper before the Berlin Medical Society on laparoscopy, or the inspection of the abdominal cavity. His method consists in puncture of the abdomen with a fine cannula, by which ascitic fluid, if present, is removed and filtered air is let in so as to form a pneumoperitoneum. A second abdominal puncture is then performed at another point and a trocar-like instrument, holding a lamp, is introduced. The lamp allows a very exact inspection of the abdominal cavity; the liver, gall-bladder, anterior wall of the stomach, intestines, and pelvic organs—but not, of course, the pancreas or kidneys—are clearly visible. The method is held to be especially valuable for the diagnosis of diseases of the liver and the peritoneum. Dr. Kalk says that the two lobes of the liver are sometimes of different colour—for instance, where cirrhosis is present in one lobe but not in the other. In diseases of the gall-bladder radiographic examination is preferable to laparoscopy, but growths of the abdominal organs are more easily diagnosed by inspection than with X rays. With accurate anæsthesia the procedure is painless and infection has never occurred. Laparoscopy should be used only if other methods of examination have not given reliable results. It is especially suitable in cases of suspected ascites, but it is contra-indicated in acute peritonitis and where there are disorders of the heart with serious degeneration of cardiac function. It may often serve instead of laparotomy.

AN ORTHOPÆDIC CONGRESS

The German Orthopædic Association held its annual meeting this year at Mannheim (Baden). The first subject of discussion was fractures of the neck of the femur. Prof. L. Böhler (Vienna) recommended the fixation of the ends of the fragments with a steel nail. By this method, devised by Peterson of Boston, the broken parts are so firmly kept together that no plaster-of-Paris dressing is required, and the patients are able to walk without a stick after four to five weeks, the femur being once more capable of supporting the weight of the body. Of the 15 cases on which he had operated during the past two years an ossification of the fracture was obtained in 13. This procedure, in Böhler's opinion, is much preferable to Whitman's method, by which, after reduction of the fracture a plaster bandage must be worn for six months. Dr. Spitzy said that in his experience fractures without a plaster bandage heal very badly.

The second subject of discussion was internal derangement of the knee-joint. Prof. Wittek (Graz) reported on 300 injuries of this kind sustained at work or sport. The steady increase in the number of injuries of the knee-joint is obviously due to the ever-growing popularity of all kinds of sport. Before ski-ing became so common, injuries of the semilunar cartilages were scarcely ever to be found in women,

but now there are as many examples in women as in men. He always operates after the first relapse and removes the whole injured cartilage. The patients are able to get up after nine days and 96 per cent. of them can take up their work again and even indulge in strenuous exercise. Injuries of the crucial ligaments produce amphiarthrosis; in 60 cases the ligaments were sutured or replaced by strips of fascia. In injuries of the lateral ligaments a plaster dressing is sufficient to restore the function. In the discussion Dr. Gaugele (Zwickau) uttered a warning against early operation in cases of injury of the crucial ligaments and recommended a more conservative procedure. Dr. Böhler also stated that for injuries of the crucial ligaments he does nothing more than puncture the hæmarthrosis and apply a plaster dressing.

The third discussion was on the treatment of badly healed fractures. Dr. Böhler said that only a very exact reduction gives good results and that massage in an early stage and passive movements as recommended by some surgeons are injurious. Dr. Bräucker (Hamburg) reported on cures of pseudarthrosis by operations on the sympathetic nerve. Dr. Böhler described his method of curing fractures of the vertebral column. He reduces the fracture a few days after the injury under local anæsthesia, and so gets rid of the deformity. A plaster jacket is then applied, but the special feature of his method is that the patients are ordered to get up as soon as the jacket has become dry and to wear a sandbag on the head in order to strengthen the dorsal muscles. He showed films illustrating the good results thus obtained.

FLY LARVÆ IN THE EAR

Dr. Ferres reports that a patient who had been operated on for otitis media and mastoiditis came to him afterwards complaining of a roaring noise in the ear and pains in the skull. Dr. Ferres was surprised to discover larvæ of blue-bottles in the ear and extracted as many as 48. The patient, who was an agricultural labourer, slept in a stable and probably a female blue-bottle had deposited her eggs in the wound cavity. After the larvæ had been removed the patient experienced no recurrence of the pain.

A NEW NARCOTIC COMPOUND

Dr. Weese and Dr. Scharff report on a new narcotic compound (Evipan) which, after many experiments with animals, they are now administering to patients. The chemical formula is N-methyl-cyclohexenyl-methylbarbituric acid, and the compound is easily soluble in water. It is made by the I. G. Farben Industrie in tablets of 0·25 g., of which one or two tablets taken during the evening produce a quiet and deep sleep. The compound is very quickly absorbed, so that its efficacy is only of short duration; it is particularly efficacious for patients who do not fall asleep and for those who waken early, since it may be given during the night and in the early morning. No undesirable effect was observed and it is stated that the heart, blood-vessels, and digestive organs are unaffected by the compound.

POLIOMYELITIS

Infantile paralysis has become more prevalent lately in Germany, especially in the provinces of Brandenburg and Pomerania. In Berlin several schools had to be closed and vaccination postponed until the epidemic had disappeared. In the week from July 3rd to 9th only 36 cases were recorded, but in the week August 28th to Sept. 3rd there were 232, compared with 53 during the same week last year.

TONSILLECTOMY AND GOITRE

Dr. Halle recently read a paper before the Berlin Medical Society on the influence of tonsillectomy on the thyroid gland. He had discovered, he said, that after tonsillectomy a goitre becomes smaller and even disappears entirely. He had observed this phenomenon in 62 cases, all women, some of whom had had a goitre for 25 years. A case where goitre developed again after thyroidectomy was cured by tonsillectomy.

UNITED STATES OF AMERICA

(FROM AN OCCASIONAL CORRESPONDENT)

A REBUFF TO CHIROPRACTIC

THE States of Arizona and Massachusetts have rejected the claim of chiropractors to practise medicine either as a whole or with certain limitations. In Arizona, where such practice was already permitted, it was hoped by the chiropractors that they might be able to sign certificates and to prescribe narcotic drugs and alcohol, but the ballot did not enable them to realise this hope. The State of Massachusetts was asked to establish a Board permitting limited practice, and the medical profession, aided by its Committee on State and National Legislation, organised a campaign of instruction reaching to almost all the 71 communities of the State, with the result that not only was the petition rejected by well over 100,000 votes, but nearly every community decided against it. Although public speaking and advertisement were brought into play to some extent, the doctors were advised that radio, newspaper, and advertising by mail would be less valuable than the method of personal contact, and coöperation was obtained from pharmacists, nurses, and dentists, as well as of the 2000 students at the three medical schools and the college of pharmacy. Italian and Greek voters were approached in their own language, the executive secretary of the local tuberculosis league obtained furlough to devote his whole time to opposing the Bill, and it is not a little interesting to learn that the local osteopathic society distributed circulars at its own expense. The appeal to the voters was founded on the advantages of the single standard of education and experience required to meet the Board's examinations, and was able to avoid the impression of being a defensive movement by physicians. The *Journal* of the American Medical Association, in recording the voters' decision, remarks that, of all the systems of healing now being offered to the American people, chiropractic is the least qualified. The mental healers appeal openly to the power of suggestion; the osteopaths have something resembling a formal education, including some knowledge of anatomy and physiology, although the essential basis of their system may be unestablished; but chiropractic, the *Journal* adds, is founded on a fallacy; its practitioners are without fundamental education and they do more harm than good.

QUARANTINE OF PARROTS

The first outbreak of psittacosis in this country was in the winter of 1929–1930. At that time 163 human cases were reported, with 33 deaths. Most of these cases were traced to infection from birds that had recently been imported from South America. The cases were numerous in the Atlantic States, no less

than 36 occurring in Maryland. During the winter of 1931–1932 12 cases, with 6 deaths, were reported to the California State Department of Health. An investigation was made by an officer of the U.S. public health service, and it was shown that infection was present in certain breeding aviaries in the southern part of the State. More recently, five cases, with one death, have been reported from Minneapolis, Minnesota, and one case from Boise, Idaho. These are believed to have resulted from infected birds coming from California. On the advice of the public health service, the Secretary of the Treasury has taken action to limit the shipment of parrots, parrakeets, and all birds of the parrot family from one State to another. No birds of this species may be accepted by common carriers for inter-State transportation unless certified by the State department of health to come from an aviary that is free from infection. The California State board of health has issued an order by which all local health officers are required to locate and isolate all birds of the parrot family. No bird may be removed from one part of the State to another without an order from the local health officer. Several States have added psittacosis to the list of communicable diseases that must be notified by physicians to the State health authorities.

The New York Hospital and medical centre for Cornell University.

SMALL-POX, MILD AND SEVERE

Whether or not the mild type of small-pox (alastrim) was introduced to Florida from Africa there is no doubt in the minds of Dr. C. N. Chapin and his associate, Dr. Joseph Smith,[1] that it spread from Florida to the rest of the United States and to other lands. These authors contend that although by this time the germ of this disease must have been transferred from one human being to another more than 800 times yet it has bred true. In support of this thesis they review seriatim outbreaks of severe small-pox in this country since the beginning of the present century and attempt, with considerable success, to show that each of such outbreaks was derived from an endemic focus of the severe type of the disease. A never-failing source of infection appears to have been Old Mexico. Bach in 1899, a U.S. public health service official, reported that practically all Mexican cities were infected with small-pox and that two-thirds of all Mexicans seen had had small-pox. In 1928 the League of Nations reported no less than 4654 deaths from small-pox in Mexico. Attention is drawn to the frequency of severe small-pox in the States bordering on Mexico and in Louisiana, which has through railroads to that republic. California suffered during 10 of the years 1911 to 1927, Arizona during 10 of the years 1908 to 1926, Texas in 13 of the years 1908 to 1923, and Louisiana in 12 of the years 1900 to 1921. "It is true that importation from Mexico has not been demonstrated in every outbreak, but it has been proved for a considerable number. Absence of good epidemiological work explains the absence of reliable records, and also much of the presence of the disease."

The authors' argument is then reinforced by reference to the records of seven States where good epidemiological records were available. "No facts have come to hand which suggest even the probability that nearly half a million cases of mild small-pox in this group of States ever reverted to the severe strain."

[1] Jour. Preventive Med., 1932, vi., 273.

NEW YORK'S NEW MEDICAL CENTRE

The accompanying photograph shows the new buildings of the New York Hospital, which now form the medical centre for Cornell University. The university itself is situated at Ithaca, several hundred miles from the city, and medical students in their later years have hitherto been distributed among various New York institutions. In 1927, however, the medical college agreed with the New York Hospital to form a joint institution. The building has been erected at a cost of some 40 million dollars, most of which was contributed by Payne, Whitney, and George F. Baker. It contains about 1000 beds and also 100 rooms for private patients. The medical school and its laboratories are established in the building and the work of the hospital is directed by whole-time professors who are in charge of the various departments. The honorary visiting staff see patients in the out-patient department but do not have charge of beds unless private patients are admitted under their care. Centralisation seems to be the keynote of hospital economy as practised in New York, and several smaller hospitals have been evacuated in favour of this new centre. Transport of the patients is provided by buses which start for the hospital every half-hour from various parts of the city.

Owing to the economic depression the actual money available for the building has turned out to be much less than was expected, and the authorities are now experiencing some difficulty in finding funds to meet their everyday requirements. Many medical men in New York think that the new hospital may prove to be too unwieldly for effective working,

and they are at no pains to keep silent on this subject.

The new centre should not be confused with the New York Medical Centre [2] which was formed by affiliation between Columbia University and the Presbyterian Hospital in 1921.

PARIS

(FROM OUR OWN CORRESPONDENT)

SAFETY ON THE ROADS

THE Institut Général de Psychologie, whose president is Prof. d'Arsonval, has decided to call a congress on safety on the roads. At first sight it may seem a trifle incongruous that such a congress should be convened by a psychological institution; but after all, it is the men behind the wheel and under the car who count rather than the bits of metal, wood, rubber, and stone which enter into the case as exhibits of secondary importance. Dr. F. Bordas, secretary-general of the institute, and Mr. L. Courtier say in the November number of *Annales d'Hygiène Publique* that 75 to 80 per cent. of the accidents on the roads are due, not to faults of machinery or flaws in the road, but simply to the frailty of man.

AN ASEPTIC BUTCHER'S SHOP

Butchers' shops in France, as in England, are awful warnings to the young. But we had got to take them for granted almost as much as the flies and other live things they bred. So it was with a shock of pleasant surprise that Parisians awoke one morning to find in their midst a hybrid between a Pasteur Institute and a butcher's shop. It had just been opened under the auspices of several distinguished members of the medical and veterinary professions, and of the local authorities. The salesmen, dressed all in white and wearing rubber-gloves, are under glass. They and the meat they sell can be seen but neither touched nor smelt (not that one ordinarily touches or smells a salesman), and the parties, inside and outside the glass barrier, communicate with each other by the aid of microphones and loud speakers. The temperature of the glass-walled room, in which the salesmen cut up and weigh the meat under the eyes of their customers, is only +7° C., and the air of this room is constantly renewed and filtered. Wrapped up in sterile sheets, the meat is mechanically transferred to the purchaser. In the basement provision is made for refrigeration and cold storage. The enterprising promoters of this practical demonstration in hygiene are arranging for delivery of their raw materials direct from the slaughter-house, so that they need not suffer the vicissitudes of the central market. Dr. Kaplan, the sponsor of this venture, has introduced a great number of other devices for preventing the contamination of food, and on the whole he has enjoyed a good press. But in one big daily newspaper, a contributor has described his painful emotions on seeing salesmen looking like surgeons about to perform some horrible operation on his own quivering flesh.

B C G INOCULATION IN DOCTORS' FAMILIES

The *Annales de l'Institut Pasteur* for November is issued with a supplement entitled *La Vaccination Préventive de la Tuberculose par le B C G dans les Familles de Médecins*, 1924–1932. In his foreword Prof. Calmette states that in France at the present time every fifth new-born baby is given B C G. This means that on an average 10,700 babies are thus treated every month in France. As doctors' children are supposedly more carefully supervised than others, a special statistical study has been made of this material, a short questionary being addressed on Sept. 12th, 1932, to the 282 French doctors known at the Pasteur Institute to have given their own children B C G. Only two failed to reply. The remaining 280 had given B C G to their 514 children. As many as 60 of them had lived in definitely tuberculous surroundings, and 43 had lived in suspect surroundings. In 140 cases the inoculation had been repeated once or twice. Between 1924 and Sept. 15th, 1932, only 7 (1·3 per cent.) had died. The causes of death were whooping-cough, broncho-pneumonia, intestinal invagination, capillary bronchitis, dysentery (Shiga), and an accident—one case under each heading. There was one death from tuberculosis—that of a child, 3 years old, who died of meningitis, had been attended by a sputum-positive nurse, and who had not been reinoculated after the first administration of B C G at birth. With regard to the health of the surviving 507 children, the following classification may be quoted: excellent, 221; parfait, 42; très bon, 95; très satisfaisant, 6; bon, 131; satisfaisant, 8. There thus remained only four children to whom one or other of these terms, some of which might seem to the casual observer to be synonyms, did not apply. One of the four was suffering from broncho-pneumonia at the time of the inquiry. Among the 280 doctors replying to the questionary there were 118 who had given B C G to a total of 7017 other children. All the 280 were unanimous in describing B C G vaccination as inoffensive. Prof. Calmette states that he has been repeatedly urged to adopt a favourable attitude towards compulsory inoculation with B C G. He is, however, sceptical as to the wisdom of such a course, at any rate for the present. He considers that a voluntary movement should become general before legislation is imposed, and he refers to the history of the introduction of vaccination against small-pox in support of his preference for freedom of action in this field.

IRELAND

(FROM OUR OWN CORRESPONDENT)

ORGANISATION OF THE MEDICAL PROFESSION

THOUGHTFUL members of the medical profession in the Irish Free State are considering, not without anxiety, certain dangers which may threaten their interests in the near future. The present system of administration of national health insurance is about to undergo reorganisation. The Commission, which has been in control since 1911, is to be abolished at the end of the year, and the central administration committed to a single official. It is stated, also, that the approved societies are all to be amalgamated into one, a step which must increase considerably the society influence on administration, and the societies have never been friendly to the medical profession. Again, medical men holding office under public authorities find themselves threatened with a cut in their salaries. The Government has declared its intention of reducing the salaries of civil servants, and also of school teachers, and if Government shows the way the local authorities will gladly follow. The demand is loudly and repeatedly made at meetings

[2] See THE LANCET Jan. 5th, 1929, Supplement: Medical Education in the United States and Canada, p. x.

of ratepayers and meetings of farmers that all salaries of local officials should be reduced. In face of these dangers, the profession is far from satisfactorily organised. Probably not more than one in four or one in five of the medical men practising in the Irish Free State is a member of the British Medical Association or of the Irish Medical Association. There are, however, signs of wakening. The council of the Irish Medical Association is endeavouring to rouse the profession to a sense of its danger, and, in response to its suggestion, meetings have been held in several counties which have been addressed by the president or other members of council. In each case those at the meeting determined to strengthen their local organisation and to endeavour to induce unattached medical men to join one of the recognised associations. One result has been a considerable increase within the last few weeks in the membership both of the British Medical Association and of the Irish Medical Association.

THE LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN

Miss E. BOLTON, dean of the London (Royal Free Hospital) School of Medicine for Women, presided at the annual dinner of the school held at the Savoy Hotel on Dec. 1st. After the loyal toasts had been honoured, the toast of the "School and Hospital" was proposed by Lord MACMILLAN. He said that the school and himself were of approximately the same age, as the school had been founded in 1873 while he had been founded in 1872, but the school had the advantage that it was not yet perhaps even approaching middle age. The early period of the school's anxieties and struggles were over and the time had come when it could look back and reflect a little. He congratulated it on having reached that stage, but held that it was a good thing to have had difficulties in early life. He had always been keenly interested in the higher education of women (though why it was always spoken of in the comparative he did not know; he would call it the "high" education of women). He would urge upon them the importance to a professional man of so practising his profession that he was something more than a professional man. He quoted the wife of a leading medical man in London who never asked to her table the men of her husband's profession, saying that she felt it was her task to gather together for him people who thought and talked of other subjects than his own. A woman novelist, in whose works he delighted, had observed that the only difference between a grave and a rut was that the rut was narrower. He concluded by saying that he knew why he was there, for whenever he was asked out to dinner nowadays he knew that he was expected to say something about the University of London. He pointed out to the company the enormous advantage to their school of being a part of that great corporate body, and urged on every member of the school loyalty to the great university which was now developing in Bloomsbury.

Miss BOLTON, in reply, welcomed the guests and sketched the chief events of the school and hospital during the preceding year. The Queen had laid the foundation-stone of the new nurses' home which, though costing a great deal of money, would save in future the cost of the present premises in which the nurses were housed. The new physical therapy department was in full swing, and an Albert Levy ward had been opened in the obstetrical unit. The extension of the pathological department had, however, been unfortunately held up for lack of funds. She mentioned changes in the staff of the school and hospital and recent publications by members of the staff, and said that the hospital was fortunate in having unexpected friends. It had received two valuable legacies, and a welcome bequest which had enabled it to augment its scholarships, grants of £30 a year becoming available for students at any stage of their career to be held in combination with existing scholarships; further, the new money had made it possible to support pathological research after qualification. To everyone's regret Sir Francis Acland had not felt able to accept re-election as chairman of the council after 19 years of most valuable service to the school, but they welcomed Sir Alan Anderson in his place.

Dr. C. B. HEALD, proposed the health of "The Guests" at a record gathering—444 brought together in this year of difficulty He had tried to gather some facts about the guests of honour that were not to be found in any book of reference, and had rung up a lady and asked what Lord Macmillan was like, the reply being "he's a perfect pest," he had pointed out that the description was unsuitable for a speech of welcome, when the voice had screamed down the telephone: "I did not say 'pest,' but 'pet.'" Speaking of other guests he alluded to Lord Burghley's prowess as a hurdler, and congratulated Miss Elizabeth Scott on having been chosen to design the Shakespeare Memorial Theatre.

Miss ELIZABETH SCOTT, in reply, said that as a member of a profession in which women were only just beginning to make their way, she congratulated the members of a fellow profession where women had achieved a most encouraging success. The architect had to be to some extent a psychologist, to get to know the kind of people who proposed to use a building, and the kind of work or play to be carried on in it, whether it was a seaside café, a drawing-room, or a conference hall. The keynote of present-day architecture was simplicity: plain wall surfaces and rounded corners were found everywhere to-day, not only in hospitals.

Lord BURGHLEY, M.P., also in reply, said that unlike Lord Macmillan, he did not know why he was there; a friend in the House of Commons had told him that his hostesses intended to dissect him to find out how he was able to jump over hurdles. He expressed his admiration for doctors, as the hardest-worked people in the world except politicians, and proved also to be a humorous raconteur.

Miss J. PARTRIDGE, proposing the health of "The Chairman," said what an excellent dean Miss Bolton had been in every way. She put in a plea for a more important place in the medical curriculum for psychology and psychotherapeutics. As a general practitioner she found that a very large proportion of her patients needed psychological help.

Miss BOLTON briefly replied, and the company adjourned to dance.

THE SERVICES

ROYAL NAVAL VOLUNTEER RESERVE

Proby. Surg. Lt. M. P. Reddington to be Surg. Lt.
Proby. Surg. Sub-Lt. P. E. F. Routley to be Surg. Sub-Lt.

ROYAL ARMY MEDICAL CORPS

J. Beggs (late Lt. on prob.), to be Lt.

The undermentioned Lts. (on prob.) are confirmed in their rank: C. M. Marsden, E. S. Tweedy, H. N. Walker, N. P. Breden, and J. W. A. McIver.

INDIAN MEDICAL SERVICE

Lt. A. M. Sheridan to be Capt.
Lt. (T.C.) B. Singh to be Capt. (T.C.).
Lts. (on prob.) P. V. Bamford and F. M. Khan to be Capts. (on prob.).
Capts. S. N. Kaul and H. N. Shivapuri relinquish their temp. commns.
Lt. H. Hannesson relinquishes his prob. appt.

ROYAL AIR FORCE

Flight Lt. R. N. Kinnison is granted a permanent commission in this rank.
Flying Officer T. A. Hunt is transferred to the Reserve, Class D (ii).

THE DOCTOR'S DAY

"Come, tell me how you live," I cried,
"And what it is you do!"

V.—BIOCHEMIST AND TEACHER

My day begins with a fairly long journey from the suburbs. All biochemists live in the suburbs, for reasons so obvious that they need not be given here.

THE POST BAG

A little before 9 A.M., on the desk in my private room, I find the morning post, and with precision I sort out the departmental bills from the other correspondence. There will first of all be letters from patients explaining why they cannot keep appointments for examinations such as test-meals. One patient is under the impression that as soon as she has been persuaded to lie down for a basal-metabolism determination some major operation will be performed on her. There will be requests for reprints from other institutions, and a line or two from personal friends abroad. A letter from Berlin describes a meeting at the Harnackhaus in Dahlem, when an important announcement was made by a leading German biochemist: maybe the isolation of the œstrus-producing hormone in crystalline form, or the discovery of a link in the constitution of vitamin D. Another letter contains a warning to look out for so and so's paper in this or that prominent journal as it is all rubbish. From America comes the description of a new and ingenious piece of apparatus for the determination of the B.M.R. Of a heavier type is an inquiry from the University whether a certain person can be registered as a Ph.D.; he has a chequered past of qualifications taken and courses done in various parts of the Empire. To sort these out is one of the most difficult tasks of a University teacher; a struggle with research problems comes as a welcome relief from the knotty problems of boards of studies. The post brings notices of University meetings and agendas of learned societies; were I to attend all of these I should not get home for dinner once a week.

The post brings also letters from practitioners describing wonderful cases in which they have performed biochemical investigations—and will the biochemist please arrange for publication in a suitable journal. In the routine testing of a patient's urine for pus the doctor noticed that on adding a drop or two of alkali the urine turned a delicate pink. On his bookshelf the only reference he could find was to congenital hæmatoporphyria; so he borrowed a pocket spectroscope from the secretary of the local scientific society, but failed to find the characteristic spectrum. Ergo here was an entirely new inborn error attended with the excretion of a substance turning pink in alkaline solution. The patient was obstinately constipated. I suggested the collection of a 24-hour specimen of urine to be sent to the laboratory. It contained phenolphthalein. Inquiry elicited that the patient had taken large quantities of this valuable aperient for a number of years. Many similar problems have been solved. A young practitioner observed a serious outbreak of leucinuria in the babies under his charge. Microscopic examination of the urine revealed the presence of peculiar laminated bodies, corresponding exactly with the picture of leucin crystals in the practitioner's text-book. "Epidemic of Excretion of Leucin in Urine" was to be the title of the clinical note. Careful examination in my laboratory convinced the doctor that the leucin crystals were granules of the starch dusting powder which he always recommended mothers to use. Finally, there will be the letter from the maker explaining that it was really quite correct for the refrigerator to run up to 37° C. over the week-end, and why should anyone be unpleasant about it?

By 9.45 my letters are answered and the next duty is to scan the titles of papers in current clinical, chemical, physiological, and pharmacological journals of England, America, Germany, and France, and pick out those which the biochemist must study. Here is a new method for the determination of blood-urea; this must be investigated. Here is a modification of the dietary régime for diabetics; this will be tried in a refractory case. Here is the account of a new and accurate method for the serum diagnosis of cancer; but my German friends have put me on my guard. A reference to the difficulties in the analysis of proteins suggests a method of overcoming them; to be passed on to a research worker in the department who has found these very difficulties.

A STAFF ROUND

Then comes the daily round of the department. I begin with my own personal assistant, checking up the work done yesterday and making suggestions for to-day. And so in turn to all the research workers and assistants, whose problems may keep me occupied until noon. This is the best part of the biochemist's day, because it enables him to keep in touch with work which varies from pure clinical to elaborate physico-chemical. Incidentally this means that the chief must read current literature so widely that he can discuss every recent advance with his staff.

To-day, however, no prolonged discussions arise and about 11 comes the hospital visit. I go to a number of medical, surgical, and gynæcological wards and ask the house physician or house surgeon whether they have any of the type of case in which I am particularly interested at the moment—it may be diabetes, Graves's disease, œdematous nephritis, or what not. If there is I suggest, with what tact I can muster, a thorough investigation, and am generally successful in getting permission. This is the more remarkable when the biochemist does not possess a medical qualification. To-day a complicated problem of renal function arises. The patient has a hydronephrosis on one side, and the surgeon wishes to remove that kidney; clinical examination suggests that the function of the other kidney is insufficient to carry on. I am faced with the alternative of assuming responsibility for the removal of the kidney or admitting that I cannot help the surgeon. I suggest the performance of a Van Slyke urea-clearance test, to be followed by analysis of specimens from ureteric catheters; on the results of these I shall base my opinion.

In the treatment of Graves's disease the biochemist becomes more and more important; few surgeons in my hospital will take the responsibility of removing the thyroid without a series of B.M.R. determinations to find out whether iodine treatment reduces the rate. Again, I am frequently consulted about unconscious patients, particularly diabetics. Only a quick determination of the blood-sugar can distinguish between hypoglycæmic and diabetic coma in a patient brought in unconscious from the street. Even the finding of sugar in a catheter specimen of urine will not make the diagnosis of diabetic coma certain, since a large dose of insulin may have been taken on a full bladder, and hypoglycæmia may have developed before the sugar-containing urine was voided. Sometimes I am asked by the house-man about a patient who excretes sugar irregularly, or another who has surprising concentration of urea in the blood. The biochemist is often invited to meet the honorary physician or surgeon during his afternoon round, and a visit to the wards may mean a lot of work coming over to the laboratory. From such investigations all kinds of interesting possibilities may arise, and fascinating theories for the ætiology of diabetic coma, Graves's disease, œdema production or proteinuria are put forward, which rarely—or never—emerge from the laboratory circle. It is, however, from such constant investigation of clinical cases, and the consideration of biochemical and clinical data alongside, that eventually lasting theories are evolved. For this reason in some hospitals the biochemist is put in

almost sole charge of the treatment of disorders of metabolism.

THE TEACHER'S TROUBLES

At noon intruders leave the wards and the biochemist returns to the laboratory to deal with problems which have arisen during his absence. After lunch he has to give a lecture, possibly to second-year medical students, possibly to third- or fourth-year men, on chemical pathological subjects; or it may be to some post-graduate class working for a higher medical or surgical examination. Teaching is perhaps the greatest of the biochemist's worries. He knows that his audience cannot follow the advances in his subject because they have no sound basis of chemistry, mathematics, or physical chemistry. The type of lecture therefore depends upon the attitude of the teacher. Some will give advanced lectures and feel they have done well, even though they are convinced that their audience has not understood a quarter of what they have said. Others will give elementary lectures outlining only in the briefest way the processes of digestion, absorption, and metabolism, fixing the student's attention on the practical outcome and only teaching him methods which the learner can both do himself accurately and understand. The latter type of biochemist is, I am afraid, in the minority. Most teachers give an elaborate series of lectures with complicated practical courses, finishing up with the remark that the actual result obtained by the student does not matter so long as he has understood the principle. But in either case the teacher will leave the lecture room unhappy about what he should do for the next course he gives, probably intending to bring the matter up at the board of studies. The students leave the lecture and proceed to the practical course, conducted by one of the assistants in the department. The chief will wander round talking to the students and come away still more unhappy as he sees them rushing through their practical work without exercising any thought and feeling that, provided they are signed up, all is well. I can myself see no solution to the problem of teaching biochemistry to students whose time is already crowded with other subjects.

After this I can go back to my own research laboratory. But the head of a large department where a number of researches are being carried on simultaneously must resort to the regular use of a personal research assistant in order to make his discontinuous activities continuous. I may perhaps work with my own hands until 5.30 or 6, when my day's work at the laboratory is ended and I can attend one or other of the meetings to which I have been invited. One of the major difficulties is to select which particular activity to pursue each day. The head of the laboratories must envy the life of one of his assistants who can do the work in which he is interested without perpetual interruption.

It may seem to the casual reader that the picture I have drawn is not one of a happy day. This however is not a fair conclusion. Writing under the cloak of anonymity one is tempted by the opportunity to ventilate grievances. But the biochemist has the satisfaction of knowing that his clinical observations are appreciated by the majority of his colleagues, who realise that such tests as the fractional method of gastric analysis, the urea-clearance test, the glucose-tolerance test, give them information surpassing in accuracy that which can be obtained by other means. Physicians and surgeons employ him as a means of confirming or refuting their clinical diagnoses—not in any sense as a surrender to the laboratory. And I have lived to see conviction come to members of the clinical staff who not so long ago scorned laboratory investigations. Presently the rivalry in the diagnostic field between the clinical observer and the laboratory investigator will disappear completely. The purely academic investigations are also of the greatest interest; take, for example, recent work on the thyreotropic fraction of the hormones of the anterior lobe of the pituitary on experimental animals, and the possible application of this work to Graves's disease. The elaboration of new methods and the investigation of new metabolic processes is fascinating work.

PUBLIC HEALTH SERVICES

The Annual Returns

AT this time of year the Minister of Health reminds the local sanitary authorities of their obligation to send in certain returns of the services dealing with maternity and child welfare, tuberculosis, venereal diseases, and hospital treatment. The formidable array of questions accompanying the reminder may give rise to a query as to the purpose of this collection of information. The answer can be found in the annual report of the chief medical officer to the Ministry. One of the requirements of the Local Government Act of 1929 imposes on the Minister of Health the duty of assuring himself that the public health service provided by the authorities is satisfactory both in respect of efficiency and progress. The Minister secures his evidence by means of specific surveys of areas by medical officers and by means of the information set out in these returns. The intent is that this information should serve a double purpose; it should indicate the provision that each authority makes both for preventive and curative medicine, and it should indicate in various ways the success attending this provision.

For instance, summarising the returns from venereal disease treatment centres (Form V.D. (R.)), Sir George Newman shows in his most recent report (1932) that there has been, generally, since 1923 a steady improvement in the ratio of attendances to total number of cases. The same returns showed, starting from 1931, the number of cases of congenital syphilis dealt with at the centres for the first time. The resulting figures give the important result that less than one-quarter of the cases came to light under the age of 5 years, so that the great majority of all cases are suffering from interstitial keratitis which ought to be prevented by treatment in the earlier years of life—clear evidence of a further need for action. Turning to the arrangements made for maternity and child welfare (Form M.C.W. 96), it will be remembered that the Committee on Maternal Mortality laid particular stress on the lack of antenatal care evident in 33 per cent. of the estimated preventable cases of death. The returns under this heading should in time provide some evidence of the progress made in attracting the expectant mother to the clinic, and in persuading her to bring her infant and her children of pre-school age for treatment and advice.

It is, in Sir George Newman's words, a national stocktaking that is involved; are the health services really delivering the goods, at what cost is it working out, and are the health and capacity of the community the better for it all? The justification of these returns lies in their contribution to this audit. It is important, therefore, that they should be compiled with precision; it is equally important not only that the questions should be so framed that their interpretation is uniform and subjective influences are at a minimum but that unproductive questions should be eliminated.

Venereal Disease Schemes in Scotland

The Edinburgh scheme for venereal disease deals with a population of about a million in south-eastern Scotland. Dr. David Lees reports that 4148 patients had not completed their treatment at the end of 1930. Of 5266 new patients in 1931, 1266 suffered from syphilis, 1604 from gonorrhœa, 77 from soft sore, and 92 from a dual infection; whilst in 2227 patients

there were symptoms of disease of the genital organs, but no evidence of venereal infection. As gonorrhœa is known to be more prevalent than syphilis, Dr. Lees suggests that a considerable amount of this disease is either untreated or is treated by general practitioners. Of the syphilis cases 9·8 per cent. attended in the sero-negative stage; 25·2 per cent. had reached the generalisation stage; 8·2 per cent. suffered from inherited syphilis, and the remainder from late manifestations. Observation of the inherited cases is continued, whether the mothers have been treated antenatally or not. Inherited syphilis shows a progressive decrease as a result of antenatal treatment.

The number of gonococcal infections shows an increase in both sexes. A large proportion of the cases of ophthalmia neonatorum were found to be of gonococcal origin. In all cases treated there was complete preservation of vision, except in one child admitted to hospital from the country 22 days after birth with one eye irreparably damaged. Dr. Lees considers the incidence of this condition is too high and that preventive treatment at birth is not carried out efficiently. He would have every suspected case admitted to hospital as an emergency.

Good results continue to be obtained from the intravenous administration of tryparsamide in early neurosyphilis and even in cases of established disease. In selected cases of neurosyphilis malarial treatment continues to give promising results.

The total annual cost is £2 8*s*. 7*d*. per case of venereal disease, which, Dr. Lees believes, compares favourably with that of other schemes. Seeing that close on 80 per cent. of the patients continue treatment until they are considered free from infection, the cost, he holds, is not unduly high.

Three interesting tables are given.

The first shows the results of 1029 pregnancies of 300 mothers suffering from untreated syphilis between 1921 and 1928: 293 pregnancies ended in stillbirths, 736 resulted in living children, but only 253 were free from syphilitic disease, whilst 267 died before the age of 5.

The second table gives particulars of the pregnancies of 121 mothers, 105 of whom were treated before the seventh month and 16 after. Nine pregnancies ended in the death of the child before or just after birth, but 8 of these mothers had not received sufficient treatment. In 4 pregnancies death was due to obstetric complications. Of 108 living children 98 had no evidence of syphilis, and 10, 8 of whose mothers had not received sufficient treatment, gave a positive blood reaction as the only evidence of syphilis.

The third table of the 13 untreated cases of maternal syphilis admitted to the Maternity Hospital in 1931 shows results similar to the first.

In 1931 23 per cent. of the patients defaulted. On account of the economic situation, Dr. Lees would like the clinic to have power to refund the fares of needy patients, but the chargeable local authorities are averse to this proposal. The male defaulters are written to; the women and children are visited by a nurse. As the results of the efforts of the nurse 83 per cent. resumed treatment. Dr. Lees has two proposals for the improvement of the scheme: (1) the provision of hostel accommodation for girls; (2) removal of the seamen's dispensary to the Leith Hospital.

The number of new cases admitted for treatment to the Glasgow clinics was over 5000, including about 2000 non-venereal cases. Dr. R. J. Peters comments on the continued drop in fresh syphilitic infections, whilst the figures for late syphilis and acute gonorrhœa remain constant. The only Glasgow clinic which does not show a reduction in acute syphilis is that used by the seagoing population. The new cases of congenital syphilis have shown a steady decrease during the last ten years. Dr. Peters notes a curious feature as to the sex-incidence of congenital syphilis. In 1922 the female cases numbered twice the male cases, but during succeeding years the excess of female cases has gradually disappeared. He suggests as a possible explanation that at one time male congenital cases mostly died in utero, and that now the disease is becoming milder and the survival-rate among male congenital syphilitics is approaching that of females. The decrease in congenital syphilis is, he says, one of the most encouraging features in the campaign.

There has been an improvement in the attendances, but the amount of default is very high. Dr. Peters states that less than one-third of the patients with either syphilis or gonorrhœa are dismissed as cured. To cope with this default, consultations between the members of the clinic staffs and an improved follow-up system have been arranged, and further efforts are to be made to convince patients of the importance of continued and regular attendance until the treatment is completed.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 26TH, 1932

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 14 (last week 16); scarlet fever, 2372; diphtheria, 1061; enteric fever, 42; acute pneumonia (primary or influenzal), 1122; puerperal fever, 29; puerperal pyrexia, 108; cerebro-spinal fever, 17; acute polio-myelitis, 12; acute polio-encephalitis, 3; encephalitis lethargica, 7; dysentery, 18; ophthalmia neonatorum, 58. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Nov. 29th–30th was as follows:—Small-pox, 59 under treatment, 3 under observation (last week 59 and 1 respectively); scarlet fever, 2070; diphtheria, 1778; enteric fever, 13; measles, 225; whooping-cough, 425; puerperal fever, 23 (plus 9 babies); encephalitis lethargica, 230; poliomyelitis, 6; "other diseases," 154. At St. Margaret's Hospital there were 14 babies (plus 8 mothers) with ophthalmia neonatorum.

Deaths.—In 117 great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 7 (1) from measles, 5 (3) from scarlet fever, 16 (2) from whooping-cough, 32 (6) from diphtheria, 47 (13) from diarrhœa and enteritis under 2 years, and 40 (9) from influenza. The figures in parentheses are those for London itself.

Middlesbrough reported 3 deaths from whooping-cough, Sheffield and Leicester each 2. Diphtheria accounted for 5 deaths each at Hull and Liverpool.

The number of stillbirths notified during the week was 254 (corresponding to a rate of 43 per 1000 total births), including 46 in London.

ASSESSMENT OF COVENTRY AND WARWICKSHIRE HOSPITAL.—Under the new revaluation it is proposed to increase the rating assessment of this institution from £282 to £2000. It has been decided to appeal.

BIRMINGHAM HOSPITALS CENTRE.—The conference representative of the hospitals and organisations concerned has reported in favour of proceeding with the first instalment of 500 beds in January next, and the executive board has decided to do so. Last spring the scheme was postponed for pecuniary reasons, but in the meantime a further £117,000 has been subscribed, making a total of close upon £650,000. The original estimate of the cost was £1,250,000; the section now proposed will cost £718,000. Sir William Morris has given £52,000. The conference laid stress on the probability that by 1936 additional hospital beds to the number of between 200 and 300 will be required, and was of opinion that any further provision under voluntary arrangement should be on the new site at Edgbaston, 150 acres in extent, adjacent to the university, given by Messrs. Cadbury Brothers.

THE BRITISH COLLEGE OF OBSTETRICIANS AND GYNÆCOLOGISTS

THE OPENING CEREMONY

ON Monday, Dec. 5th, the headquarters of the College of Obstetricians and Gynæcologists was declared open by H.R.H. the Duchess of York. This is a beautiful Adam house in Queen Anne-street, excellently suited for its new public purpose and conveniently situated. Her Royal Highness was accompanied by the Duke of York and a number of distinguished visitors, and the Hon. Fellows and Council were presented to them. A procession was then formed and proceeded to the library, occupying the whole of the first floor, and appropriately decorated.

There the President (Prof. W. Blair Bell) said that the event could appropriately be called an historic occasion, since the ceremony indicated that an important position had been reached in the advance of obstetrics and gynæcology to their rightful place in the hierarchy of medicine. Men of British origin had been pioneers in every great advance, but until 1886 there had been in this country no statutory compulsion for an obstetrical examination before obtaining the licence for practice, and until the foundation of this College in 1929 there had been no collegial organisation to promote the study of the subject in any part of the world. Nothing now could prevent the British College of Obstetricians and Gynæcologists from implementing fully and in its own way the principal objects of its foundation: to encourage the study and improve the practice of obstetrics and gynæcology. Study and research would be fostered, and the Council would do all in its power to ensure that the maternity services of the country, and indeed of the Empire, were manned by those specially fitted for the work. The greatest need was for post-graduate clinical study. A diploma guaranteeing efficiency ought to be imperative for all holding official positions in maternity work. The College had the strength it needed, for all the professors of obstetrics and gynæcology in the country and Dominions were fellows, and more than 90 per cent. of the recognised teachers of the subjects were fellows or members. The future held out for the College the fair prospect of usefulness to the profession, to the State, and to women the world over. An appeal for an endowment capital fund had been launched, and fellows and members were contributing liberally. The house was opened free of debt, and a reserve fund of £6000 had been accumulated from registration fees and subscriptions in three years—great sacrifices to support the College, and he hoped that others would be found to follow the example of Lord Riddell, who had been so generous a donor.

The Duchess of York then declared the building open, and desired to take the opportunity of paying a tribute to the memory of Sir Henry Simson, through whom she had received the first request to perform the inaugural ceremony. "No one," said Her Royal Highness, "had worked harder or more unselfishly to reduce maternal mortality, and his name should ever be remembered with honour and affection."

The President thanked the Duke and Duchess for their presence, adding "those of us who practise in these subjects believe that the sanctity of married life is of primary importance in the spiritual and physical welfare of the race. Your Royal Highnesses have given to all a vision of the happiness of married life, and through the little Princesses the people have been permitted to share your joys and show their loyalty."

The President then admitted Sir Robert Jones and Prof. W. P. Graves, of Harvard, to the honorary fellowship, and Dr. J. H. Ferguson, Dr. B. K. T. Collins, Dr. F. J. McCann, and Dr. J. McGibbon to the ordinary fellowship. Addressing Sir Robert Jones, he said that Wales had produced many valuable things—scenery, coal, and wizardry, and Sir Robert's wizardry in his surgical work had made the whole world his debtor. There could be few honours of peace or war which remained still to be conferred on him, and the fellowship might seem a belated recognition, but his wise advice in times of difficulty had made the College desirous of having him in their body. Turning to Prof. Graves, he said that the new honorary fellow stood out in the medical profession as a man of discretion and judgment, whose influence had been profound not only in the United States, but in all centres for his special work.

A series of telegrams were read from all parts of the world, and the ceremony ended by the company rising to the words of exhortation: "Super ardua consurgamus, floreat collegium."

THE BANQUET

In the evening the second dinner of the College was held at Grosvenor House, Prof. Blair Bell presiding. After the loyal toasts had been honoured, the health of the College was proposed by Vice-Chancellor H. J. W. Hetherington, who said that the afternoon's ceremony had testified to the speed with which the College had progressed from its nativity to the adult state of possessing a house of its own. It had won first the acquiescence and then the active goodwill of the older institutions, and had shown resolution to prove in action the claims that it put forward. In three years it had won a place in the sun. The widespread response it had obtained was sufficient evidence of its value to those who practised the specialty. Much was heard of over-specialisation; it had been said that to the general surgeon to-day was left only the bare abdomen, and even that he might not keep long. The fundamental purpose of the College was not to disrupt but to unite: to gather together all concerned with this special aspect of medicine, and to focus on it all the lessons of all the sciences and of practical experience. The fulfilment of that unifying mission was the ambition of the College.

The President, in reply, agreed that the College united almost every branch of surgery and medicine, as well as anatomy, physiology, and pathology; it was the aim of the College to link them still more closely. He explained the armorial bearings, of the College, which adorned the menu cards as being symbolical that their work went on night and day, and he urged the College to choose leaders for its journey into the future who would make personal sacrifices for the cause, when they would travel easily, and should have a pleasant time; for the jungle had been cleared. All the tribes encountered would be friendly, although some of them might not speak the collegian's language very well. The College was British and had an Empire personnel. He concluded with a tribute to the officers and an exhortation to each member to realise that he had the safe keeping and advancement of the College in his hands.

Lord Riddell, proposing the health of the guests, said that he was supposed to be speaking as an honorary Fellow of the College—a position which had already attracted some attention. He had recently received a letter addressed "Lord Riddell: Certified

Midwife." He would be happier speaking as a newspaper man. Newspapers and doctors had many things in common; a passion for truth and accuracy, and an interest in observation. Newspapers, however, might have to pay heavy damages if they made a mistake, whereas if the doctor made a mistake people merely said: "What did you expect?" He welcomed the guests individually and expressed his enjoyment of his honorary fellowship.

Prof. William Graves, in reply, said that the signal honour done him was an expression of goodwill from Great Britain to his country and from the British College to the society of their fellows in America. He recalled the Obstetrical Congress that he had attended in Manchester, and expressed the admiration then inspired in him by the President as an outstanding gynæcological figure in the world and a fine sportsman. The British College of Obstetricians and Gynæcologists was a tribute to his powers, and he hoped that America would emulate the enterprise; he would, he said, certainly ask Prof. Shaw, who was visiting America as guest of honour of the obstetrical conference next spring, how the College had been brought to life.

Sir StClair Thomson said that they were indebted to Prof. Graves for a charming speech, but must not let that weigh on them too much as the debt to America was already too great. He suggested that he was there because he had once been a resident medical officer at Queen Charlotte's Hospital, and during his time they had not lost a mother or a baby. The preservation of the babies had probably been due to his reading of Lusk's text-book, which taught that the cord should not be tied until pulsation had ceased—a novelty in those days. The preservation of the mothers was due to the fact that he had first been Lister's house surgeon and had introduced Listerian methods in the hospital when the post of resident officer had appeared to become a perquisite of King's College men.

There was a large gathering of fellows and members and guests at the dinner.

MEDICINE AND THE LAW

Rights of R.A.M.C. Officer

THE Chancery action brought by Lieut.-Colonel J. W. Kynaston against the Attorney-General, for redress of grievances as to retired pay, seniority, &c., ended in the only possible way. Mr. Justice Farwell refused to concern himself with the merits of the plaintiff's claim. He merely referred to the legal principle that no engagement between the Crown and its military or naval officers can be enforced against the Crown in a court of law. Colonel Kynaston's claim therefore could never succeed, and, to prevent further costs or waste of the court's time, the action must be struck out forthwith. As will be seen, this principle that the Crown cannot thus be sued as on a supposed breach of contract is applicable to others besides soldiers and sailors. It would apply, for instance, to a medical practitioner who was appointed by a Government department to go overseas on what he understood to be a definite period of engagement. The Crown, no matter what might be the terms of the engagement, could still dismiss him at any time without any liability for breach of contract.

Colonel Kynaston's claim was based on a set of facts peculiar to his own case. He retired from the Active List in 1905 with a gratuity and remained subject to recall in emergency. In August, 1914, he was recalled to duty on mobilisation, and had to abandon the practice in which he had invested his gratuity. He complained that the Royal Warrant of 1900 had been altered in 1906 and 1907 in a manner adversely affecting officers of the Reserve in his position. He found his name placed at the bottom of the list of majors on the Active List of the R.A.M.C. with seniority as from August 5th, 1914, instead of as from 1899 when he had originally been promoted to be major. This deprivation of seniority, he protested, was inconsistent with precedent and contrary to the Army Act. It was his fate (as it was also the fate of many who had similar grievances) to find his appeals disregarded during the period of hostilities when the members of the Army Council had little time for personal questions. In May, 1918, he completed the term of his engagement when the Council removed his name from the Active List and the Reserve of Officers, but he was compulsorily retained in military service for another year. He submitted a formal complaint under Section 42 of the Army Act: but this, like his other appeals, obtained no redress. He now asked the Chancery Division for a series of declarations to establish that the Army Council had not complied with the dictates of natural justice and equity, had not properly interpreted the plain and natural meaning of Royal Warrants and statutes, and had exceeded their legal powers by depriving him of seniority and by retaining him in the Service; he further claimed that the conditions of his service constituted a species of contract with the Crown which could not be altered without his consent. To these claims there was a short answer. No subject can sue the Crown on any such supposed contract; as for the Royal Warrants, the Army Council is made their interpreter by the express provision of the Warrants themselves.

The judge referred to the legal position as established in 1896 in Dunn *v.* the Queen. The petitioner in that case claimed to have been engaged on a three-year contract by the Commissioner of the Niger Coast Protectorate and complained that he had, before the three years were up, been notified that his services were no longer required. His petition of right failed before Mr. Justice Day and his application for a new trial was dismissed. The Solicitor-General asserted that all public servants of the Crown, whether military, naval, or civil, hold their office at the pleasure of the Crown unless some statute provides the contrary. Judges of high authority confirmed this view. Lord Esher said that, as regards military service, the principle was too clear to need argument; he had no doubt it applied equally to non-military service. "It is essential to the public good," said Lord Herschell, "to be able to determine the appointments at pleasure except in cases where, for the public good, it has been determined that some other tenure is better." Ten years earlier, in De Dohsé *v.* the Queen, Lord Watson had said that in any engagement purporting to be a contract between a subject and the Crown, the Crown's power to dismiss must be imported. "I am of opinion that, if any authority representing the Crown were to exclude such a power by express stipulation, that would be a violation of the public policy of the country and could not derogate from the power of the Crown." These dicta and decisions were confirmed afresh in 1920 in Denning *v.* the Secretary of State for India, where a man who went out to the East with what he thought was a five-year appointment found his engagement terminated before the five years were up and that he had no remedy whatever.

CORRESPONDENCE

AN ASPECT OF PROFESSIONAL CONDUCT

To the Editor of THE LANCET

SIR,—I think there will be, in the minds of many members of our profession, one or two questions arising out of the two disciplinary decisions of the General Medical Council reported in your last week's issue. With the Council's general attitude in respect of misconduct on the part of a doctor with his patient there will no doubt be a very wide agreement. But human nature being what it is, there may well arise cases where a genuine affection ripening into love springs up as the result of ordinary professional contact. It may also well be, in such cases, that either doctor or patient may at the same time be unhappily or incompatibly married. Granted such a position, and apart, of course, from theological or dogmatic considerations, the doctor, if he be wise and hopes for eventual marriage, will no doubt take steps to secure that professional relations cease. But when exactly, in such circumstances, does a patient cease to be a patient? It may be that there is some rule governing this matter, but from what I have been able to observe it is not very generally known; and although most of us may personally have been fortunate enough not to expect the information to be of any intimate assistance, many will feel, I think, that it should be clearly understood.—I am, Sir, yours faithfully,

London, Dec. 3rd, 1932. H. H. BASHFORD.

REACTIONS FOLLOWING TUMOUR IRRADIATION

To the Editor of THE LANCET

SIR,—We cannot think that any of your readers is really interested in how much powder and shot Dr. Cramer has in reserve for any one of us, but we do learn that the subject we have ventilated in your columns is one having a wide circle of interest. For indeed it is a pretty vital matter to know whether there is any reasonable chance of increasing the powers of resistance to cancer in man. And the broad issue is this: for the last 30 years a mass of experimental work in laboratories throughout the world has been done on the transplantable tumours in animals. On the basis of such work we take up the position that such a chance is a reasonable expectation. Dr. Cramer takes the opposite view. He goes so far as to say that work upon the transplanted tumours with a view to the production of immunity is so much waste of time. Other laboratories than these engaged in similar occupations may wonder how far it is necessary to heed this admonition.

In drawing any conclusions on a subject like this the first thing to find out is what are the facts of the case, secondly what their interpretation should be, and thirdly what deductions may fairly be drawn. We select for brevity a single instance of Dr. Cramer's method of meeting a statement of fact. He states:

> "I am not sure whether the final sentence of their letter is intended to mean that Prof. Russ and his colleagues claim to be in possession of a strain of Jensen rat sarcoma which behaves not like a homoplastic tumour but like an autoplast of a spontaneous tumour, and differs in this respect from all transplantable animal tumours. If this is their meaning I must for the sake of brevity content myself with the statement that this is an assertion without a scrap of evidence to support it and is not borne out by the charts and tables published by Russ and Chambers."

What we claim is that the Jensen sarcoma grown in these laboratories in our sensitive stock has shown for the past five years characteristics which we are unable to distinguish from those of spontaneous tumours. Our technique is carried out so that only apparently healthy tumour cells are used for inoculation. We have shown [1] that in a consecutive series of animals (K.C. stock) without special selection, in a total of 272, not a single tumour retrogressed and only one did not grow. In a group of rats which were allowed to live long enough 50 per cent. developed metastases. And the fact that a rat is bearing a tumour does not prevent the progressive growth of a second tumour if it is inoculated. This is not a new strain of tumour but the same strain which was given to us in 1912 by Dr. J. A. Murray, director of the Imperial Cancer Research Fund; it has been propagated by us continuously ever since. When we revert to the technical conditions which were used years ago and inoculate this strain into less sensitive stock or use unhealthy tumour for inoculation it shows the same characteristics that it has previously shown, and a fair percentage disappear spontaneously. In fact, this tumour behaves either in the typical manner of a transplanted tumour or like a spontaneous new growth according to the technical conditions that we use for its propagation. These are experimental facts which anyone can verify by visiting these laboratories.

Dr. Cramer refers to a number of papers which he thinks prove that there is no experimental evidence indicating that the absorption of irradiated tumour tissue has a general therapeutic effect on tumour growth. We suggest that anyone who wishes to track this subject should examine those papers keeping specially in mind the following points: what care was taken to ensure that the tissue used contained no necrotic material? What practical measures were adopted to avoid autolytic changes taking place during radiation? Was the dose of radiation accurately measured and care taken to make sure that it was not enough to cause necrosis? If the papers are examined in this way, bearing in mind how very easily the reaction is upset, our insistance on technique is understood.

We limit the term immunity to a condition of acquired protection against tumour growth which can be produced in sensitive animals by the absorption of tumour tissue. This is the only form of immunity known to show specificity and to persist throughout an animal's life. We consider the fleeting and feeble protection produced by normal tissues should not be called immunity, and no importance can be placed on the failure of this means of inducing resistance to affect spontaneous tumour growth.

We are, Sir, yours faithfully,

H. CHAMBERS,
G. M. SCOTT,
S. RUSS.

Barnato Joel Laboratories, The Middlesex Hospital, W., Dec. 1st, 1932.

URINARY PROTEOSE

To the Editor of THE LANCET

SIR,—We have read with surprise the article by Dr. G. R. P. Aldred-Brown and Dr. J. M. H. Munro in your issue of last week, on "Autogenous Urinary Proteose in Rheumatoid Arthritis." Since the publication of the article on Urinary Proteose, by Barber and Oriel in 1930, a research group of the

[1] Jour. Path. and Bact., 1930, xxxiii.

Harrogate Royal Bath Hospital has had under close observation a series of rheumatoid cases, slightly more extensive than those quoted. These cases have been subjected to a close clinical scrutiny, and all relevant radiological, biochemical, and bacteriological investigations have been carried out. The results of the investigations are not yet complete, but several facts in direct opposition to the article are evident :—

1. In at least 50 per cent. of the cases a positive intradermal test was obtained. Each test was carefully controlled, using as a control fluid a buffer solution similar to that in which the proteose was dissolved.
2. Again, a number of the patients were so highly sensitive to the proteose on injection that dilutions as low as 1 in 100,000,000 had to be used.
3. The response to treatment by appropriate injections has been satisfactory so far as one can ascertain up to date in a considerable proportion of cases.

We anticipate that the outcome of this research will show that the proteose antigen prepared by the method described by Oriel will have a definite therapeutic place in the treatment of rheumatoid arthritis.

We are, Sir, yours faithfully,

W. YEOMAN,
SINCLAIR MILLER,
R. P. J. RUTHERFORD,
J. L. WESLEY-SMITH.

The Royal Bath Hospital, Harrogate, Dec. 5th, 1932.

To the Editor of THE LANCET

SIR,—As the paper by Drs. Aldred-Brown and Munro in your last issue may give rise to misconceptions as to what I have found in experiments with urinary "proteose," may I briefly state what is and is not claimed in this respect? It is claimed :—

(1) That this substance, isolated from an allergic patient during an acute attack, would in suitable dilution give a positive intradermal test in the patient's own skin.
(2) That proteose made from a normal person will not give positive tests on his skin under the same conditions.
(3) That there is a distinction which can be drawn between cases of asthma—i.e., that the proteose substance from a patient with multiple sensitisations gives positive skin tests with asthmatics who have been demonstrated to have similar sensitisations, and not with asthmatics which have not been so demonstrated.
(4) It is not claimed that urinary proteose is specific to the individual.

In this article Drs. Aldred-Brown and Munro have drawn attention to Dr. Freeman's denial of these findings and to the failure of Prof. Murray Lyon and his co-workers to confirm them. There is, however, another side to this matter which may have escaped their notice.

(*a*) Dr. E. T. Conybeare [1] has published the following results : A series of 70 asthmatic patients was tested with proteose from a case of hay-fever showing active symptoms, and with proteose from an asthmatic subject not sensitive to pollen ; 69 per cent. of the pollen-sensitive subjects gave positive reactions to the hay-fever subject's proteose only, and 17 per cent. to both proteoses. In the non-sensitive cases, 76 per cent. gave no positive reactions to either, 12 per cent. to the hay-fever proteose only, and 8 per cent. to both.

(*b*) W. Darley and R. Whitehead [2] found that in three asthmatic cases negative intradermal tests were obtained with proteose made when the patient was free from symptoms. Two of these cases were re-tested with proteose obtained when suffering from symptoms, and then gave positive reactions. Five cases of *acute* arthritis were studied, and three gave positive intradermal tests, but 10 cases of *chronic* arthritis gave negative tests.

(*c*) Dr. N. Burgess [3] found that of 11 normal cases tested with proteose, 10 gave negative tests. Of 15 cases of skin allergy, 11 gave positive intradermal tests.

(*d*) Dr. Bruce Pearson [4] found that 55 per cent. of a series of 60 asthmatics gave a positive reaction to asthmatic urinary proteose, whereas in 20 healthy students only 15 per cent. gave positive reactions to asthmatic urinary proteose.

(*e*) In a later publication Darley and Whitehead [5] found positive intradermal reactions in all of 12 cases of seasonal hay-fever to their respective proteoses, and all these cases improved after desensitisation by proteose.

It will be seen therefore that the subject is by no means closed, as one might assume from Drs. Aldred-Brown and Munro's paper. I have purposely refrained from publishing my experiences with urinary proteose in cases of rheumatoid arthritis until I have collected sufficient data, but my results to date agree in no way with those published by these writers.

I am, Sir, yours faithfully,

G. H. ORIEL, M.D.

Queen Anne-street, W., Dec. 4th, 1932.

[1] Guy's Hosp. Rep., 1931, lxxxi., 458.
[2] Proc. Exp. Biol. and Med., 1931, xxviii., 668.
[3] Brit. Med. Jour., 1932, i., 37.
[4] Proc. Roy. Soc. Med., 1932, xxv., 1458.
[5] Ann. Internal Med., 1932, vi., 389.

AMŒBIC DYSENTERY IN INFANCY

To the Editor of THE LANCET

SIR,—As I have worked for a number of years on the subject of dysentery and have devoted myself to a study of both the bacillary and amœbic forms, I have read your annotation on Amœbic Dysentery in Infancy (Nov. 26th, p. 1171) with great interest.

I very much doubt whether amœbic dysentery ever occurs in children of tender years, for I personally have never seen the disease in a child under 5 years of age. This fact is quite intelligible to those who are familiar with the natural history of the disease. Amœbic dysentery is contracted through drinking amœbæ-contaminated water, or through eating contaminated vegetables, a route of infection practically excluded in infancy. The development of amœbic ulcers takes a very considerable time to accomplish—possibly a year or more, subsequent to actual oral infection with the *Entamœba histolytica*. It therefore seems to me from the description, as well as from the death-rate, that Prof. Guido Izar has been describing and treating typical cases of bacillary dysentery as it occurs in infants where it is usually a very severe and often fatal disease. I suspect very much that the large macrophage cells which occur so abundantly in the bacillary dysentery exudate of the stool may have simulated the vegetative forms of *E. histolytica*, a point which I have frequently laboured.

This brings me to the subject of treatment. Mistaken diagnosis leads to mistaken treatment and I would issue a plea against the universal emetine treatment of dysentery in infants and indeed in small children. Emetine is a most toxic drug for children ; collapse and heart failure are very liable to occur, especially when it is misapplied, as it so frequently is, to the bacillary form of dysentery. I cannot too strongly protest against this all too prevalent blunderbuss misuse of such an invaluable drug as emetine.—I am, Sir, yours faithfully,

PHILIP MANSON-BAHR, M.D., F.R.C.P.

Harley-street, W., Dec. 2nd, 1932.

MUSIC IN THE MEDICAL QUARTER

To the Editor of THE LANCET

SIR,—A privilege should not be granted lightly to any class of the community, but do you think it would be unfair if some effort were made to stop the performances of itinerant musicians in the neighbourhood of Cavendish-square? Whether the reasons which persuade so many practitioners to settle in this part of London are good or not is beside the point; so long as they do so, and by so doing pay their rates and taxes, ought not they to be protected from the constant concatenation of appalling noises to which they are at the moment subjected by what appears, in moments of irritation, to be a ceaseless stream of musicians?

There seems to be no time limit to the performance, nor check to the banality of the tunes performed. Barrel organs, bands, singers, people who attempt to play the piano with their fingers instead of by twisting a handle, sellers of flowers, and sellers of chocolates. The streets are a mass of those who prey upon the good nature, and, perhaps to some large extent, the nervous emotions, of those who traverse them. I understand that the area is held to be a profitable one because people who are going to consult a doctor are often nervous, and are apt to throw a sop to Cerberus before they summon their courage to ring the front door bell and receive admission to the consulting-room.

Would any great hardship be inflicted on the unemployed were Cavendish-square and its neighbouring streets to be closed permanently to barrel organs, *et hoc genus omne*?

I am, Sir, yours faithfully,

CHRISTOPHER HOWARD.

Harley-street, W., Dec. 1st, 1932.

HOSPITAL DESIGN

To the Editor of THE LANCET

SIR,—Your leading article of Nov. 26th (p. 1165) remarked on the change which is overtaking architecture in the sense of a new interest in structure as opposed to style. There has been held recently a competition for the new Scarborough Hospital. The first four designs, selected from a large entry, have been exhibited in London, and were worthy of the attention of all those interested in hospital planning. Usually when a new hospital is proposed an architect is appointed, but on the rarer occasions when a competition is held one has perhaps a greater opportunity of judging what progress has been made in hospital design.

The proposed site in this case provides ample space for a hospital of pavilion or semi-pavilion type, in which the various units could be articulated in a simple manner. Nevertheless the first two premiated designs were of the American "vertical" type of plan, adopted presumably for primary cheapness, but for which the only real justification would be a cramped city site. There results a jig-saw puzzle of ingenious planning in which, for example, in one scheme two groups of private wards and one open ward are articulated at the end of a corridor inextricably mixed with the ward service rooms—one hesitates to think of the congestion at visiting hours, and in the other scheme, the provision of one ward kitchen, next to the operating theatre, to provide for 64 beds in 6 wards. In other ways the detailed planning shows an annoying complexity, confusing circulation, badly lit rooms, casualty entrances out of sight, and other disregard of administrative difficulties too many to criticise here. The orientation of the wards in most plans is meaningless, surely ward balconies should face south, and wards be in such direction as to get the maximum amount of light during the day.

The promoters, presumably after studying alternative methods, stipulated for large wards with beds at right angles to the walls. Such a condition is retrogressive when one considers the many advantages of having beds parallel to well-fenestrated walls, such as the economy of spacing, semi-privacy, increased light and air, patients not facing the windows, and so forth.

Hospital architecture in this country is no longer an example to the world, and this is not surprising in times when the "voluntary system" cannot be called on for the replacement of our older hospitals, but the state of affairs I have commented upon should be improved considerably if medical men would interest themselves more in questions of hospital planning—not merely in relation to their own hospitals as occasion arises; and if those of sufficient experience could be asked to collaborate both with the assessors of such competitions and with the architects.

I am, Sir, yours faithfully,

HUGH GAINSBOROUGH.

Park-crescent, London, W., Dec. 3rd, 1932.

TONSILLITIS IN GENERAL PRACTICE

To the Editor of THE LANCET

SIR,—On reading in your last issue the report of the discussion on nephritis which took place at the Royal Society of Medicine on Nov. 22nd, I was most amused at the remarks of one of the speakers, that tonsillitis was not taken seriously enough by general practitioners. How easy and simple would be their lot if they could just "say the word" in every case of tonsillitis they meet—three weeks "avoiding exposure" when it is over, and then a little later "out with the tonsils." What a harvest of surgery there would be if it were as easy as that to have operations performed whenever we felt it might be beneficial. What a relief it would be to the minds of most of us in general practice if we could so lightly bring our patients to fall in with these counsels of perfection. I am afraid that some of these clever doctors, who haunt the sacred portals, tend to get a little out of touch with reality.

I am, Sir, yours faithfully,

HENRY CHURCHILL.

Devonport-street, W., Dec. 6th, 1932.

CARDIFF'S HEALTH SERVICES.—The health committee of Cardiff corporation has had before it the report of a survey of the city's health services recently made by Dr. C. H. Wade on behalf of the Ministry of Health. The report stated that while the standard of efficiency and progress in the general health service had been reasonably maintained, there was a serious scarcity of accommodation in the city's hospitals for the isolation of patients suffering from communicable diseases, and some overcrowding in the tuberculosis wards at the city lodge. This, however, might be alleviated if the Welsh National Memorial Association proceeded with their plans for increasing their hospital accommodation in South Wales. The isolation hospital was overcrowded, and there was insufficient accommodation for the staff. It was therefore impressed upon the council that they should proceed at an early date with their proposals for a new ward block and a new nurses' home.

PANEL AND CONTRACT PRACTICE

Panel Chemists and Gifts

IT was announced last week that the Minister of Health has refused to alter the terms of service for national health insurance chemists by deleting the clause which forbids a chemist to give, promise, or offer a gift or reward in order to influence anyone to present an insurance prescription. The clause is to be found in a schedule to the Medical Benefit Regulations. To alter it some amending regulation would presumably be necessary. When the late Minister, Mr. Arthur Greenwood, was understood to be about to delete the clause, the Retail Pharmacists' Union took action and, in Gilleghan and Others *v.* the Minister of Health, an attempt was made to obtain a judicial order prohibiting the Minister from carrying out his intention. The Retail Pharmacists, who objected to deletion because it would give their coöperative competitors an advantage, based their case on the fact that an understanding as to their terms of service had been negotiated with the Minister for a fixed period and that the deletion would violate the agreement.

The case came before Mr. Justice Farwell in the middle of May last year. He took exactly the same line as he recently took in Colonel Kynaston's proceedings against the Attorney-General. He held that the alleged contract could not be legally enforced against the Crown; consequently the case must be dismissed without examination of its merits; it could not succeed and it was proper to dismiss it forthwith out of mercy for the parties and to save costs and judges' time. The Retail Pharmacists' Union, however, has won its point by other means. Sir E. Hilton Young says the clause shall not be deleted so long as he remains Minister of Health.

The First Year in Northern Ireland

Dr. James Boyd has given us a most interesting description [1] of the first year's working of panel practice in Northern Ireland, where he is chief medical officer to the Ministry of Labour. The scheme, he says, applies to about one-third of the total population and one-half of the adults are included in it. Most of the general practitioners are in the service; just short of 500 practitioners are giving service to some 360,000 insured persons. Dr. Boyd is afraid the practitioner with the large list does not always adequately examine his patients, but education of the public is going ahead, and he thinks the small number of doctors who have "so little sense of the duty entrusted to them" will soon find their lists getting smaller. The large majority of doctors however do render the best type of service to their insured and private patients alike. There is difficulty about services outside the scope (the equivalent of GP 45 here), claims being sent in on the grounds of: (*a*) newness of treatment; (*b*) amount of trouble and responsibility entailed. Dr. Boyd maintains the principle that the only question to be considered is whether the treatment rendered is within the skill and competence of general practitioners as a class. He indicates the same difficulties about certificates as those encountered here, and mentions four: (1) detection of malingering; (2) difficulty of deciding just when a patient should return to work after an illness, and especially after a surgical operation; (3) the problem of the young married woman who is determined to draw the maximum amount of cash benefit; (4) the occasional tendency on the part of the doctor to yield to undue pressure from the patient. Charity and sickness benefits are, he remarks, entirely different matters, and the former is no concern of the approved society. He explains another important rule which states that forms provided by the Ministry should not be used for any patient other than one whom the practitioner is attending, whether as principal assistant or deputy, as an insured person. This prevents a dissatisfied insured person, who has been signed off, from substituting an intermediate certificate form obtained from another doctor. The unofficial certificate given by another doctor causes the society to inquire why the change has taken place. There is, it seems, some difference in the regulations about pregnancy, for Dr. Boyd states the rule "Pregnancy where diagnosed while the patient is being certified as incapable from some other cause shall be stated on the certificate"; but this is not so here, and in certain cases it would be thought definitely wrong to mention pregnancy at all.

[1] Brit. Med. Jour., Nov. 19th, Suppl., p. 261.

OVER-PRESCRIBING

In the matter of over-prescribing, Dr. Boyd's experience is most valuable. He explains that a greater frequency than the areal average may show: (*a*) that a doctor has a relatively large number of chronics; or (*b*) that a mixture that should last eight days has been repeated after four or five days; or (*c*) that medicine has been prescribed without any therapeutic indication. If the cost is above the areal average the explanation is probably: (1) Multiple prescriptions—e.g., a mixture and a powder on the same form. (2) Routine use of excipients such as infusion of senega or gentian. The cost of senega in a prescription form was generally 9*d.* (3) Unnecessary sweetening agents—e.g., syrup of orange; in one case 12 fl. oz. was ordered at a cost of 4*s.* (4) Undue predilection for costly preparations—e.g., elixir or linctus of heroin. (5) Routine use of special formulæ—e.g., a mixture of three syrups of iron. (6) Lack of knowledge of the scale of dispensing fees. And Dr. Boyd adds the following rules for economical prescribing.

1. An expensive drug should not be prescribed if an equally good result is likely to be obtained with a less expensive one; there is no relation between the cost and the efficacy of drugs.

2. If a patient asks for a "tonic," it does not follow that he is anæmic and requires iron; further, if ferri et ammon. cit. is indicated, it is not necessary to add in routine fashion decoct. aloes co., inf. quassiæ, &c.

3. The routine use of *B.P.* aquæ, *B.P.* infusions, decoct. sarsæ co., &c., should be avoided.

4. Tinct. aurantii for flavouring should be avoided; it costs 1*s.* 8*d.* an ounce.

5. The use of concentrated preparations will often reduce the cost considerably. For example, liq. ammon. acet. costs 1*d.* an ounce, but liq. ammon. acet. conc. (eight times) costs 1½*d.* an ounce; inf. gent. co. costs ½*d.* an ounce, but inf. gent. co. conc. (eight times) costs 2*d.* an ounce.

6. In prescriptions for liniments, sp. vini rect., which costs 1*s.* 10*d.* an ounce, should be avoided; sp. vini meth. costs ½*d.* an ounce.

7. In deciding between powders and tablets for 12 doses or less it is more economical to order powders, but for a larger number of doses tablets are more economical.

8. In the cases of insulin, the chemist's profit is 6*d.* per 100 units, together with a dispensing fee of 5*d.*, with a maximum of 2*s.* 11*d.* In other words, whether 500 units or 2000 units are ordered, the chemist's profit is 2*s.* 11*d.*

9. The use of proprietary drugs should be avoided as far as possible.

10. Unnecessary expense generally arises, not in the essential drug, but in the way in which it is compounded.

11. The instructions "Use as directed" should be avoided,

accurate instructions being given and an effort made to see that these are carried out.

With regard to proprietary articles for which an inflated price is charged, it may be difficult, Dr. Boyd remarks, to support the contention that the preparation is reasonably necessary. "The statements of drug travellers should not be too readily accepted. A doctor who had been in the habit of prescribing a proprietary form of —— was informed by the traveller that the non-proprietary form of the drug was very liable to produce unpleasant gastric symptoms." Co. Armagh apparently swallows more medicine than Co. Antrim: 2·83 prescription forms per insured person as against 1·64. In this respect Co. Armagh resembles Manchester.

The position would appear to be that Northern Ireland is going through the same sort of experience in the administration of the Act as England did in the early days of national health insurance. While there is probably in both areas room for economy in the cost of drugs without therapeutic loss to the patients, yet there is in being a medical service vastly superior in skill, accuracy, and attention, to that in vogue under the old club system.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Housing and Slum Clearance

IN the House of Lords on Nov. 24th the Bishop of WINCHESTER asked His Majesty's Government (1) what steps had been taken by local authorities in England and Wales under the Housing Act, 1930, to deal with (*a*) clearance areas, (*b*) improvement areas and (*c*) individual insanitary houses; and (2) what steps they proposed to provide houses which could be let at rents within the means of the poorer members of the working-classes. He said that though since the war something like 1,900,000 houses had been built the housing problem was by no means solved, the shortage of houses in the County of London remained very serious. The Census Report stated that two-thirds of the families in London failed to secure the exclusive occupation of a separate dwelling, but mostly shared with others a water-supply and sanitary arrangements. Overcrowding of two to a room had decreased in the last ten years, but the more intense form of overcrowding of three or more to a room had increased, notwithstanding the reduction of the child population.

"SLUMS GETTING WORSE"

The figures in the Census Report were, he said, confirmed by the current reports of medical officers of health. For example, Bermondsey was known to have 1475 families living in overcrowded conditions, and the position seemed to be getting worse. In Southwark 2113 families were housed in 1531 decayed and dilapidated and overcrowded houses or dwellings. West Ham contained 3000 overcrowded houses. From the provinces came the same sort of reports. The Bishop gave examples of quite unsuitable living conditions which he had himself investigated. Tens of thousands of people were living under conditions of squalor, misery, and wretchedness. He understood that up to the end of October 160 clearance orders and 71 compulsory purchase orders had been confirmed by the Minister, involving a displacement of 31,000 people. In addition, resolutions in respect of 23 improvement areas had been passed by 13 local authorities affecting about 1050 persons. He wondered how many had been actually carried out. But, even if 31,000 people were moved from the slums, how small that was compared to the total number who were dwelling in such conditions. The great housing programme had failed, in that it had provided many decent houses for artisans and others with regular wages, but comparatively few houses for those who had small wages and large families. There was need for a much larger number of "non-parlour" houses, with three bedrooms; building of these houses had slowed down in almost every direction. A definite statement of policy from the Ministry of Health was required. Meanwhile the slums were getting worse and the houses on the margins of the slum areas were gradually deteriorating. A housing programme would relieve unemployment, and the cost of building was to-day lower than it had been for a large number of years. He pleaded with the Government to press local authorities to go forward with building schemes drawn up on economical lines.

Lord BUCKMASTER said it was suggested that the Government were prepared to curtail grants to private charitable bodies in connexion with housing. He regarded such economy as the gravest and most inexcusable waste. It was impossible by saving money in that way to get national reconstruction. Private enterprise in the matter of slum dwellings had produced a most deplorable state of things, and he felt strongly that some step to move housing out of private hands would have to be made. He trusted that the Cabinet would not economise on this fundamental thing.

The Marquess of SALISBURY said they must not sweep away in a moment of sympathetic enthusiasm all considerations of economy. Nothing had been worse for the working class than the want of economy in the past, and the heavy taxation had had a terrible effect upon industry. He suggested that they should investigate more closely the question of reconditioning unfit houses, rather than go in for rehousing.

Lord DYNEVOR asked the Government to bear in mind the necessity of making it easier to obtain possession of property in rural areas where many cottages required for agricultural labourers were now inhabited by artisans.

Lord NOEL-BUXTON hoped for a speeding up of clearance schemes, improvement schemes, and the general provision of new houses for lower wage earners. Inaction to-day was waste, not only of health and happiness and industrial efficiency, but perhaps worst of all, of national character.

A PLEA FOR CAUTIOUS ADVANCE

Viscount GAGE, replying for the Government, said they did not control the movements of the population or the allocation of housing accommodation as did the Russian Government. Therefore, the Government must constantly examine their policy and observe what was its effect on building by private enterprise. It was by no means easy to determine how far the subsidy to housing was now assisting in the production of housing for the working classes. The May Committee went so far as to say that the housing subsidy had played a part in keeping up the cost of building. The annual charges in respect of housing subsidies already passed by Parliament amounted to £13,500,000, and those charges were increasing at the rate of £350,000 a year. The adoption of new housing proposals and the increase of annual charges would involve a plunge into deep economic controversy, such as the question of the rents of existing houses, and how far rent restriction hindered the mobility of labour and added to overcrowding. It was important not to create new abuses as fast as they dissolved others. The plea for cautious advance was strengthened by the fact that to-day the clearance of slums was proceeding at a record rate. The progress since the passing of the Act of 1930 had equalled the entire progress

of the previous 12 years. Since the passing of the Act 563 clearance areas with a population of 75,275 persons of the working classes had been declared as clearance areas by 144 local authorities. That compared with a population of 75,000 persons involved in the clearance operations during the previous 12-year period. In respect of those 563 areas, 277 clearance orders and 108 compulsory purchase orders were submitted, of which 160 clearance orders and 71 compulsory purchase orders, involving 31,000 persons, had already been confirmed. In addition, local authorities had arranged for the purchase of 25 whole areas and 8 part areas containing approximately 3810 persons. The number of unfit dwelling houses demolished was 1575, and other houses 43. Persons displaced from demolished houses numbered 7131 up to Sept. 30th last. Up to the present time some 16,000 houses had been or were being built for rehousing under the Act of 1930, but admittedly this only represented a beginning. It had been and was the policy of the Government to give every encouragement to the efforts of local authorities. There had been difficulties in the delimiting of the areas to be treated as improvement areas, but some progress had been made. Thirteen local authorities had declared 23 areas to be improvement areas, involving the displacement of 1750 persons, and they were opening up these areas, repairing certain houses and making bylaws to prevent overcrowding. In regard to insanitary houses, more than 1,000,000 houses a year were inspected, upwards of 300,000 a year were rendered fit by informal action, and action under the Public Health Acts resulted in some 227,000 houses every year being made fit. More than 4000 insanitary houses had been demolished under the Act of 1930, not including some 500 demolished in anticipation of formal action. In addition, over 1000 unfit houses had been closed for human habitation, and over 700 parts of buildings. As to the admitted shortage of low rental houses, the Government had pressed local authorities to erect houses of the three-bedroom, non-parlour type. A small type of house could be built at an all in cost of £350, and without the Exchequer subsidy or rate contribution could be let at a rent of about eight shillings a week, exclusive of rates. He had no statement of new housing policy to make on behalf of the Government. Clearly, however, the building of small houses was becoming an economic possibility, the building societies had already put before the Government a proposition concerning large-scale building schemes, and the matter was interesting the Minister of Health very considerably. No reduction of the assistance given by the Government to the voluntary societies was contemplated.

The Bishop of WINCHESTER said he did not think that the figures in connexion with the slums were altogether satisfactory, and it was most satisfactory to have the assurance that the Government proposed to encourage the use of the existing Act, and he hoped that a full statement of policy would soon be made.

Matrimonial Causes Bill

INSANITY AND DIVORCE

In the House of Commons on Wednesday, Nov. 30th, Mr. HOLFORD KNIGHT asked leave to introduce a Bill to amend the law relating to matrimonial causes. He said this was a modest measure directed to one of the recommendations made by a Royal Commission 20 years ago. It sought to make two changes in the law, one a substantial and the second a minor and consequential change. The substantial change was to add to statutory grounds of divorce the ground that the respondent was incurably insane, and had been a certified lunatic continuously for a period of not less than five years immediately preceding the presentation of the petition. The minor change was a consequential one which enlarged the present legal provision withholding from a petitioner the relief granted if the condition of mind was caused by his or her neglect or bad conduct. Complaint was being made, he observed, that the House was being asked to deal with this Bill instead of a Bill on the general lines of the recommendations of the Royal Commission 20 years ago. The House was aware that after a very careful and long inquiry into matrimonial grievances the Royal Commission made recommendations that the law of divorce should be enlarged to contain a number of grounds. His view was that a Bill of that character making drastic and far-reaching changes in the law should be undertaken only by the Government itself. He thought that persons outside the House were incurring a grave responsibility by exciting hopes in the minds of aggrieved citizens that the present administration was contemplating any such large change in the law. As far as he knew there was no warrant for such a view, and he was extremely sorry that persons of position should hold out what he believed to be a false expectation. Why he selected this particular cause was that the Royal Commission paid direct attention to this aspect of matrimonial relief, and he would put on record these words:

> "Indeed, incurable insanity is more effective in destroying the marriage relationship than any other causes which we have recommended as grounds for divorce."

A very eminent medical man who gave evidence before the Commission used those words, with which he (Mr. Knight) was in agreement, in describing the social difficulty created by insanity. Dr. Robert Jones said:

> "The marriage contract is ended by death, and should similarly and for the same reason be ended by confirmed insanity, which is social and domestic extinction."

A practical difficulty which the House would desire to face in considering this matter was whether they could be satisfied that this condition of incurable insanity could be relied on. As to that the Royal Commission heard a great deal of evidence, and the limit of five years was founded upon their recommendations. They said:

> "It was suggested that it may be difficult to determine the fact that a patient is absoluely incurable and that conflicting medical evidence may leave the question unsettled. The evidence clearly shows that if a time limit be given the difficulty becomes almost negligible, and there appears to be no reason to suppose that if the ground is confined to lunacy pronounced incurable after five years continuous confinement any real difficulty would be felt."

In this Bill the limit of five years recommended by the Commission had been adopted, but if the House thought that a longer period should be inserted it was open to the House to do it, because the title of the Bill had been so framed that any such change as the House might desire to make in the measure could be undertaken. He was not speaking on this matter for himself, but for hundreds of men and women among all classes in this country who had suffered frequently in silence from this terrible tragedy of an insane spouse. This Bill did not put upon any such person the duty of proceeding to a divorce, it left it optional; but if it was desired after a long and continuous and hopeless experience of insanity to sever the marriage tie why should that end not be effected? He thought that opinion outside that House was overwhelmingly in favour of that course. He appreciated, though he did not share, the conscientious objection taken to the Bill. It had, however, long been the law of the land that, in circumstances determined by Parliament, the courts should be authorised to sever the marriage tie, and therefore it was much too late in the day to urge that in no circumstances should divorce take place.

Mr. LOGAN said that he opposed the Bill simply and solely because he thought that Mr. Knight had not made out his case in regard to those who were incurably insane. How was he able to apply the term "incurably insane" to any particular person? He was convinced that for the purity of the household and for the benefit of all that was good and

sane in the body politic it was essential that the family tie should be strictly preserved.

Leave to bring in the Bill was granted by 96 votes to 42. The Bill was then brought in and read a first time.

Hospitals and Road Accidents

In the House of Commons on Monday, Dec. 5th, the London Passenger Transport Bill was considered in committee. Sir D. HERBERT, chairman of committees, was in the chair.

On Clause 3 (General duty of Board as to passenger transport),

Dr. O'DONOVAN moved an amendment to give the Transport Board power to make, under regulations drawn up by them, payments to hospitals for the treatment of patients injured by vehicles owned or controlled by the Board. He said that the position that existed in our hospitals called for clarification, if possible. The extent of the problem brought forward by the amendment was indicated by two matters of common knowledge. First, there was the statement of His Majesty's judges that 60 per cent. of contentious litigation was due to road accidents. Secondly, they had all read with appreciation the powerful speeches of Lord Buckmaster on this subject in the House of Lords. All this reflected the amount of work which road traffic threw upon hospitals. This clause gave the Board power to do all things necessary for the convenient and efficient working of their undertaking. That was a most powerful and operative clause, and he was very anxious that the Board should do all things necessary, which he took to mean all things humane and just, without being shackled by any past restrictions. Under the Road Traffic Act, 1930, payments could be made to hospitals in respect of treatment of road accident cases up to a limit of £25. That sum, though it was welcome and acceptable, was a contemptible one, and the hospitals only received about 10 per cent. of their outlay. Moreover, the payments were limited to hospitals which were defined by the Act of 1930 as offering in-patient treatment. The cost of dressings, strappings, chloroform, nursing attendance, and cleaning up after a dirty accident when the treatment was not in-patient treatment might run from £4 to £7, yet the hospital in such a case was precluded from making any claim. A really first-class accident might cost a hospital £130 to £170, and a patient sometimes stayed 18 months in the hospital. This was a big problem calling for consideration from the point of view of justice. If they went into any hospital to-day on the main lines of traffic they saw wards which should be devoted to the sick filled with patients with broken and fractured limbs. The Transport Board, which would set the pace in regard to road traffic in London and the environs, would he feared be the biggest factor in the production of road accidents. Doctors attached no blame to motor traffic; the public must acclimatise itself to the traffic and get out of the way, as it got out of the way of snakes and lions, but he appealed to the Minister of Transport to throw more light on the question whether, under this important operative clause, the Transport Board would be able to reimburse the hospitals more amply and generously than had been possible under the Road Traffic Act, 1930.

Sir F. FREMANTLE supported the amendment. He said that the Bill as it stood definitely withdrew from the Transport Board any compulsion to insure their vehicles in respect of road accidents. He wanted to know what the attitude of the Government was on that material point. It was possible that the Minister might say that when they reached Clause 51 (which absolves the Board from the duties imposed under Clause 35 of the Road Traffic Act) he would deal with the matter. But that would not be sufficient, because he did not see how any amendment, or even the abandonment, of Clause 51 could meet the case. He wanted it clearly stated whether the extra matters which could not be dealt with under Clause 51 with regard to hospital treatment could be dealt with under the interpretation of the words in the clause now under discussion.

Lieut.-Colonel HEADLAM (Parliamentary Secretary to the Ministry of Transport) said that he had listened with great interest and sympathy to the speeches of Dr. O'Donovan and Sir F. Fremantle. The Government could not accept the amendment in the form in which it stood, but they wanted to make it perfectly clear that they did not wish this Board to be put in any different position from the undertakings which it succeeded. Therefore, when Clause 51 was reached, he would not be prepared to proceed with it. There was nothing in the Bill which would preclude the Board from continuing, and even extending, the practice which was now followed by certain of the companies or undertakings which were being transferred, to make voluntary contributions to hospitals; but the Government did not see that there was any reason why they should make a special exception in regard to the Board over and above any other undertaking in respect to placing on them further special obligations such as were suggested in the amendment. When Clause 51 was reached he would move its deletion from the Bill.

Dr. O'DONOVAN said that in view of what the Minister had said he asked leave to withdraw the amendment, which was given. The amendment was nevertheless passed on the following day.

HOUSE OF COMMONS

WEDNESDAY, NOV. 30TH

Insurance against Motor Accidents

Mr. PIKE asked the Minister of Transport whether he was aware that numerous cases arose in connexion with the non-observance of conditions in policies of assurance relating to motor vehicles which resulted in the vehicle being uninsured at the time of an accident, and so rendering the insurance company free of liability; and if he would take steps to ensure to relatives of accident victims means of obtaining payment of damages.—Mr. PYBUS replied: Much as I sympathise with the victims in these cases, I cannot see any practicable form of legislation that would ensure in all cases the payment of damages to third parties when the motorist renders himself uninsured owing to the non-observance of conditions contained in his policy. Under Section 35 of the Road Traffic Act, 1930, a motorist is liable to heavy penalties if he uses a motor vehicle in respect of which no valid policy of insurance or other form of security is in force.

Mr. PIKE asked the Minister of Transport if he was aware that the protection afforded to the public by compulsory insurance was avoided when the death of the person causing the injury took place prior to an ascertainment of damages, with the result that the insurance company concerned was released from all responsibility; and if he would take steps to amend the law in this respect.—Mr. PYBUS replied: As I have explained on previous occasions the legal proposition that a right of personal action ceases on the death of the person against whom it may be brought is of wide application, and although the point was considered when the Road Traffic Bill was before the House two years ago, Parliament decided that it would not be right to depart from this general principle in the particular case of motor injuries.

Chemicals in Warfare

Mr. THOMAS WILLIAMS asked the Financial Secretary to the War Office whether he was aware that chemicals supplied to the chemical defence department by certain manufacturers for testing respirators could be equally well used for offensive purposes; and whether it was the policy of the War Department to allow these manufacturers to acquire the necessary plant and experience so that they might be prepared for offence if requested.—Mr. DUFF COOPER replied: Certain chemicals used for the testing of respirators could also be used illegally for offensive purposes, but it is not the policy of His Majesty's Government to use any chemicals for offensive purposes.

Mr. HICKS asked the Financial Secretary to the War Office if he would give details of the steps being taken to provide for the protection of the civil population against chemical warfare; and whether he would assure the House that the work being done at Porton and Sutton Oak had no object in view other than defence.—Mr. DUFF COOPER replied: As indicated by my right hon. friend the Lord President of the Council (Mr. Baldwin) on Nov. 10th, the

whole question of the protection of the civil population against attack from the air is under consideration by His Majesty's Government. Substantial progress has been made, but the stage has not yet been reached at which any detailed statement of the measures which are being taken with this object could usefully be made. As regards the last part of the question, the work at Sutton Oak and Porton has no object in view other than defence.

Medical Treatment of Disabled Men

Mr. SMEDLEY CROOKE asked the Minister of Pensions how many disabled men were receiving medical or hospital treatment at the present time; and, of this number, how many were in receipt of treatment allowances.—Major TRYON replied: At the end of October there were 4600 men in hospital or in receipt of some other form of medical or surgical treatment from the Ministry, apart from those in mental hospitals. I have not the precise information asked for in the last part of the question, but certainly the great majority of these men would be receiving allowances.

Replying to further questions by Mr. Smedley Crooke, Mr. Salt, Mr. Potter, Mr. Liddall, Captain Strickland, and Mr. Morgan on the subject of treatment allowances, Major TRYON said: Hon. Members are, I fear, under some misapprehension as to the nature of the allowances referred to. These allowances are provided by the Royal Warrants to meet the circumstances of cases in which the patient suffers loss of earnings in consequence of his treatment by having to give up temporarily a remunerative occupation on which he was dependent for the support of himself and his family. They thus represent compensation for loss of the wages or profits, if any, which would otherwise be received, and while consideration is always given to cases where a man is no more than temporarily unemployed at the date of commencement of the treatment, I should have no authority to adopt the suggestion that the special allowances should automatically be given in every case of hospital treatment, regardless of the facts of the case. I may add that there has been no change in the practice of the Ministry which has been maintained under successive Governments in regard to these allowances. I would remind hon. Members that during any period of incapacity for work, whether owing to war service disability or otherwise, disabled men normally receive sickness or disablement benefits under the National Health Insurance Acts in addition to their pensions.

THURSDAY, DEC. 1ST

Manganese Poisoning

Mr. PERKINS asked the Home Secretary how many cases of manganese poisoning had occurred in Gloucestershire during the last 12 months; and whether any steps had been taken to prevent this occurring.—Mr. OLIVER STANLEY replied: My right hon. friend is not aware of the occurrence of any such case in the period mentioned. The conditions at the Gloucestershire works which my hon. friend no doubt has in mind have been the subject of close attention from the Factory Department, and I understand that new plant is to be installed within the next month or two, as a result of which it is anticipated that the conditions as regards dust should be much improved.

Detention at Broadmoor Asylum

Mr. JOEL asked the Home Secretary whether it was the practice in Broadmoor asylum to keep separate criminals who had actually been convicted and those who had not been convicted but only found insane upon arraignment; and whether, in view of the fact that the latter might not actually be guilty of the offences of which they were indicted, he would reconsider the whole policy of committing such offenders to Broadmoor, which was regarded as specifically a criminal lunatic asylum.—Mr. OLIVER STANLEY replied: Broadmoor asylum is run on hospital lines, and the inmates are classified according to their mental condition and general conduct, and not according as to whether or not they happen to have been convicted. Whether a man is found "insane on arraignment" or "guilty but insane" depends upon his mental condition at the time of trial, and this distinction would afford a very unsatisfactory basis of classification. My right hon. friend sees no reason to alter the existing policy in regard to admissions to the asylum.

Mr. JOEL: Is my hon. friend aware that considerable distress is caused to the relatives of non-convicted persons sent to Broadmoor, and will he endeavour to make it publicly known that persons sent to Broadmoor are not necessarily criminals.

Mr. STANLEY: I think that is generally recognised. They can be sent to Broadmoor before as well as after conviction.

The Birching of Children

Mr. PRICE asked the Home Secretary if he was aware that at Exeter five young lads were sentenced to six strokes of the birch, the sentence of the youngest lad, aged 8, being reduced to four strokes of the birch; that at the Manchester juvenile court four boys, aged from 11 to 13 years, were sentenced to six strokes with the birch; whether he would state the nature of the instrument used in such cases and the reason for the attendance of the doctor; and whether he would circularise all magistrates requesting them to refrain from ordering the birching of children of tender years.—Mr. OLIVER STANLEY replied: My right hon. friend is informed on inquiry that five boys at Exeter and two (not four) boys at Manchester were recently ordered to be whipped. The instrument used was a birch rod, and the boys were medically examined before the punishment was inflicted to make sure that they were physically fit for it. In reply to the last part of the question, the discretion as to the use of such punishment rests by law with the justices, and in the circumstances my right hon. friend would not be justified in taking the action suggested.

Death Sentences on Children

Mr. MANDER asked the Home Secretary when Section 19 of the Children and Young Persons Act, 1932, providing that sentence of death should not be pronounced or recorded against any person under the age of 18 years, would come into operation and the reason for the delay.—Mr. OLIVER STANLEY replied: For administrative and financial reasons it has not been found practicable to bring the Act generally into operation before April 1st next. On further consideration, however, my right hon. friend has decided to make an order bringing Section 19 (2) into operation at an early date.

Vaccination Laws

Mr. GROVES asked the Minister of Health whether he had made arrangements to obtain the views of any other public authorities, beyond the county councils, on the present position of the vaccination laws; and, if not, whether he would consult the county boroughs and obtain their views on this matter.—Sir E. HILTON YOUNG replied: Yes, Sir. I have asked for the views of the County Councils Association, the Association of Municipal Corporations, and the Metropolitan Boroughs Standing Joint Committee.

Smoke Abatement

Brigadier-General MAKINS asked the Minister of Health what progress had been made with regard to smoke abatement in the London area and throughout the country during the past 12 months.—Sir E. HILTON YOUNG replied: Considerable progress has been made though much still remains to be done. Eight additional local authorities have made by-laws relating to the emission of black smoke, making a total of 161 authorities in all, including the London County Council. A good deal of useful work has been done by regional committees, and many local authorities up and down the country are keeping a closer watch on smoke nuisances.

Water-supply Survey

Mr. CHORLTON asked the Minister of Health, in view of the water-supply in certain districts being deficient whilst in other districts there was an abundant supply, if he would set up an inquiry to ascertain the total available good water-supplies of the country with a view to a balanced distribution.—Sir E. HILTON YOUNG replied: A comprehensive inquiry such as is proposed would cost a good deal of public money, and as at present advised I am not of opinion that it would add enough to the information already available to justify such an expenditure. The ascertainment of supplies is only part of the problem. The most practical procedure is the formation of advisory regional water committees systematically to survey needs and resources and to formulate programmes for meeting the needs in the most effective and economical way.

MONDAY, DEC. 5TH

Surgical Boots for War Pensioners

Mr. PARKINSON asked the Minister of Pensions what economy had been effected during the 12 months to the most convenient date as a result of the policy of declining to furnish surgical boots, but making alterations to boots purchased by pensioners who needed special footwear owing to a war disability.—Major TRYON replied: The hon. Member is under some misapprehension. The Ministry do not decline to furnish surgical boots where these are prescribed as necessary.

Water-supplies

Mr. RHYS DAVIES asked the Minister of Health the total amount of loans sanctioned by his department during the

last 12 months for water-supplies; and how much of that amount was for new work and extensions, respectively.—Mr. SHAKESPEARE replied: The loans sanctioned during the year ended Nov. 30th, 1932, amounted to £1,782,000 of which £780,000 was for new work and £1,002,000 for extensions.

Fouling of Water by Gulls

Mr. THORNE asked the Minister of Health what action was being taken by the Metropolitan Water Board to prevent the fouling of water in the London reservoirs by seagulls.—Mr. SHAKESPEARE replied: My right hon. friend is informed that efforts have been and are being made by the Metropolitan Water Board to scare gulls away from their reservoirs, but that because of the large area covered by the reservoirs this is not wholly practicable. My right hon. friend is assured that no danger to public health need be apprehended.

Chemical Glassware

Sir JOHN SANDEMAN ALLEN asked the President of the Board of Trade what steps he had taken with regard to the representations made to him on behalf of the British chemical glassware industry in connexion with proposals to establish factories in this country, with the assistance of alien labour, to manufacture chemical glassware, including tubing; and if he was aware of the capacity of the British industry to manufacture these products for the whole of the home market and for the dominions.—Dr. BURGIN (Parliamentary Secretary to the Board of Trade) replied: I have received representations to this effect and communicated them to the Minister of Labour with whom rests the responsibility for issuing permits for the employment of alien labour. The Ministry has been informed that the Board of Trade see no reason to question the accuracy of the view expressed on behalf of the British chemical glass industry.

Manufacture of Narcotic Drugs

Mr. MANDER asked the Secretary for Foreign Affairs what countries had ratified and what countries had failed to ratify the convention for limiting the manufacture and regulating the distribution of narcotic drugs; and when it was likely to enter into force.—Sir J. SIMON replied: The following countries have ratified the convention: Canada, India, Persia, Portugal, Sweden, and United States of America. The following countries have acceded to the convention: Nicaragua, Peru, and Sudan. The following countries, in respect of which the convention was signed, have not yet ratified: Argentina, Austria, Belgium, Bolivia, Brazil, Chile, Costa Rica, Cuba, Czechoslovakia, Danzig, Denmark, Dominican Republic, Egypt, Ethiopia, France, Germany, Greece, Guatemala, Hejaz and Nejd, Italy, Japan, Liberia, Lithuania, Luxembourg, Mexico, Monaco, Netherlands, Panama, Paraguay, Poland, Rumania, San Marino, Siam, Spain, Switzerland, Uruguay, and Venezuela. At the meeting of the Fifth Committee to the Assembly in October last, the delegates of a number of these countries announced the intention of their Governments to ratify shortly. H.M. Government in the United Kingdom have taken all necessary legislative action to enable the convention to be ratified within the stipulated time-limit, and have announced their decision to proceed to ratification. In view of the announcements made at the Fifth Committee, referred to above, it is hoped that a sufficient number of ratifications will have been deposited to enable the convention to come into force before the date stipulated in the Protocol of Signature—namely, July 13th, 1933.

TUESDAY, DEC. 6TH

Women and National Health Insurance

Mr. DAVID ADAMS asked the Minister of Health the number of women married, single, or widowed, respectively, insured under the National Health Insurance Acts for each of the preceding five years.—Mr. SHAKESPEARE (Parliamentary Secretary to the Ministry of Health) replied: The number of married women insured under the National Health Insurance Acts is only obtained for the purposes of the valuation of the assets and liabilities of approved societies. At the time of the second valuation (1922–23) there were 4,844,014 women in normal insurance, of whom 928,126 were married and 3,915,888 were spinsters or widows. For the third valuation (1927–29) the corresponding figures were 1,132,244 married women and 4,294,877 spinsters or widows.

MEDICAL NEWS

University of Cambridge

On Dec. 3rd the following degrees were conferred:—

M.B. and B.Chir.—Geoffrey Hale, R. W. Nevin, John Petro and S. M. Silverstone.

B.Chir.—J. O. Harrison.

University of Oxford

Radcliffe Travelling Fellowship.—An examination for this Fellowship, which has an annual value of £300 and is tenable for two years, will take place on Feb. 14th, 1933. In a notice in our issue of Nov. 26th (page 1193) it was erroneously stated that the holder must spend at least nine months abroad. The regulations enjoin that the Fellowship shall be vacated ipso facto by a Fellow who spends more than nine months in the whole within the United Kingdom.

Society of Apothecaries of London

At recent examinations the following candidates were successful:—

Surgery.—V. R. T. Baylis and L. Bhanot, Royal Free Hosp.; B. Busby, Univ. of Bristol; P. A. Diemer, St. Mary's Hosp.; G. S. Grist, Univ. of Oxford and St. Mary's Hosp.; and E. J. Littledale, Guy's Hosp.

Medicine.—P. D. Bhatt, London Hosp.; Y. Constad, Guy's Hosp.; and R. C. P. Thomas, St. Mary's Hosp.

Forensic Medicine.—V. Constad, Guy's Hosp.; E. F. David, Univ. of Cologne and Royal Free Hosp.; F. M. F. Forrest, St. Mary's Hosp.; J. O. Gordon, Middlesex Hosp.; J. A. Van Rooyen, St. Bart.'s Hosp.; and J. C. Williams, St. Mary's Hosp.

Midwifery.—S. M. Basu, Univ. of Durham; A. Glynn-Jones, Univ. of Liverp.; J. A. McClintock, King's Coll. Hosp.; H. Shukry, Univ. of Cairo; and S. H. Tan, Guy's Hosp.

The following candidates, having completed the final examination, are granted the diploma of the society entitling them to practise medicine, surgery, and midwifery: V. R. T. Baylis, B. Busby, V. Constad, J. O. Gordon, G. S. Grist, E. J. Littledale, H. Shukry, S. H. Tan, and R. C. P. Thomas.

Royal Faculty of Physicians and Surgeons of Glasgow

At a meeting of the Faculty on Dec. 5th the following were admitted to the Fellowship: Prof. David Campbell (Aberdeen), Dr. Edward Cecil Ross Couper (Glasgow), Dr. James Paton Fleming (Glasgow), Dr. John Baxter Gaylor (Munich), Dr. Robert Kirk (Rothesay), Dr. Charles Antony Lavery (Glasgow), Dr. John Stewart (Glasgow), Prof. Matthew John Stewart (Leeds), Dr. John Vallance Thomson (Rothesay), and Dr. James Houston Wright (Glasgow).

University of London

Applications are invited for a university readership in physiology tenable at Guy's Hospital Medical School. Candidates should preferably have a definite interest in the clinical side of physiology. Particulars will be found in our advertisement columns.

The Paul Philip Reitlinger prize, offered for the best essay embodying the result of some research work on a medical subject carried out by the candidate, has been awarded to Stephen James Lake Taylor, a student of St. Thomas's Hospital medical school, for an essay on the Cause of the Alkaline Tide. Next year the prize will be awarded for the best essay on Contingency.

University of Bristol

The medical school of this university will celebrate its centenary on June 30th and July 1st, 1933. A provisional programme has been arranged which will include on the afternoon of the first day receptions at the Bristol Royal Infirmary and Bristol General Hospital, in the evening a dinner of present and past students and guests, to be followed by a reception at the university, and on the second day a combined graduation ceremony of ordinary and honorary graduands, followed by a luncheon.

University of Wales

Welsh National School of Medicine.—The following appointments have lately been made: Dr. Gilbert Strachan, professor of obstetrics and gynæcology from Oct. 1st, 1932; Dr. J. B. Duguid, professor of pathology and bacteriology from Jan. 1st, 1933; Dr. C. J. McSweeney, lecturer in infectious diseases, from April 1st, 1932; Mr. D. Leighton Davies, lecturer in ophthalmology, from July 1st, 1932; and Dr. A. G. Watkins, lecturer in diseases of children, from Oct. 1st, 1932.

Cancer Research Workers' Conference

The second informal conference of cancer research workers, organised by the British Empire Cancer Campaign, will be held on Wednesday and Thursday, Dec. 14th and 15th, at the rooms of the Medical Society of London, Chandos-street, W. Further information may be obtained on application to Mr. Cecil Rowntree, hon. secretary of the organising committee, at 12, Grosvenor-crescent, S.W. 1.

Ministry of Health

Sir Hilton Young, the Minister of Health, has appointed Mr. J. M. K. Hawton to be his assistant private secretary.

Royal Institution

At a general meeting of this institution on Dec. 5th it was announced that the managers had elected Dr. G. Elliot Smith, F.R.S., professor of anatomy in the University of London, to be Fullerian professor of physiology, in succession to Mr. J. B. S. Haldane, F.R.S., whose tenure of office expires next January.

West Kent Medico-Chirurgical Society

At a meeting of this society to be held at the Miller General Hospital, Greenwich, at 8.45 P.M. to-day, Friday, Dec. 9th, Dame Louise McIlroy will deliver the Purvis Oration. Her subject is Recent Investigations into the Causation and Prevention of Stillbirths and Neonatal Deaths.

Australian and New Zealand Medical Association

The winter dinner of this association will be held at the Trocadero Restaurant, London, W., on Friday, Dec. 16th, at 7.45 P.M. for 8 P.M., Mr. L. Graham Brown presiding. All medical visitors from Australia and New Zealand are invited to be present. The hon. secretaries, Mr. E. T. C. Milligan and Mr. Philip J. Jory, may be addressed at 26, Queen Anne-street, W.1.

Royal Sanitary Institute

A meeting for the discussion of Clearance Areas and Improvement Areas was held at this institute on Nov. 29th, with Lord Balfour of Burleigh, the president, in the chair. Dr. James Fenton, medical officer of health for Kensington, spoke of the possibilities of the Housing Act, 1930. Up to March 31st, 1932, only 21 improvement areas had been declared as against 420 clearance areas. He thought the reason for this might be that the authorities had naturally dealt with clearance areas first, since they were already familiar with the procedure, which was akin to that laid down by earlier Housing Acts for unhealthy areas; while the definition of improvement areas was not so clear-cut, and the procedure might well seem to present difficulties. The new method, however, had definite advantages, not least of which, in these difficult times, was that it was economical.

Presentation to Sir William Wheeler

On the occasion of his departure from Ireland Sir W. I. de C. Wheeler has received a gratifying presentation from old patients and friends in the parishes of Kilcullen and Kilmeague in Co. Kildare. In acknowledgment Sir William said that he had received nothing but kindness and consideration in his new surroundings, but that Co. Kildare was his old home, to which it would be his aim to wander back whenever possible, and renew ties of affection dating from childhood.

Dangerous Drugs Regulations

To meet the situation created by the publication of the new British Pharmacopœia, the Home Secretary has made Regulations amending the list of preparations in the third schedule to the Dangerous Drugs (Consolidation) Regulations, 1928. The Regulations also exempt mixtures of Dover's powders and certain liniments, ointments, and plasters which have been found incapable of causing addiction, and from which, in practice, a dangerous drug cannot be recovered. Copies can be obtained through any bookseller or from H.M. Stationery Office, Adastral House, Kingsway, London, W.C.2.

Hospital Saving Association

At the annual meeting last week, Sir Alan Anderson presiding, it was stated that the number of contributors had increased by nearly 100,000, bringing the total to 1,000,000 in the ten years since the foundation of the association. The year's income was £580,000, most of it raised by weekly collections of threepence. Of this sum £441,916 was absorbed by hospital services. Extra hospital benefits totalled £84,000—£33,000 for dental and £30,500 for eye treatment, with £20,500 for convalescent and other benefits. An inquiry among group secretaries as to whether out-patients had to wait an excessive time, produced 30 negative and 24 affirmative answers. The association has entered during the year into comprehensive arrangements with the Middlesex and Essex county councils, and has agreed with the London County Council for the whole range of its hospitals. The association's vouchers will cover the first ten weeks of treatment in any L.C.C. hospital, and will exempt patients from inquiries as to means for admission, such inquiries being made by the group secretaries.

Queen Mary's Hospital for the East End

During the past year this hospital dealt with 30,000 casualties and 170,000 out-patients. Subscriptions have fallen off, and there is a total debt of more than £27,000.

Socialist Workers' National Health Council.

A health and housing meeting will be held at the Royal Institute of Public Health, 23, Queen-square, London, W.C.1, from Dec. 12th to 17th. In the afternoons lectures will be given by medical men on the prevention of disease, chronic rheumatism, socialism and the worker's health, tuberculosis, malnutrition, and the work of a public health department, and some films will be shown.

Canterbury Maternity Hostel

This useful little institution is threatened with serious difficulties by the refusal of the Central Midwives Board to continue recognition as a training centre for pupil midwives after March next on the ground that with only eight beds the training is insufficient. Since the hostel was opened 12 years ago, however, 32 out of the 33 pupils it has trained have satisfied the Board's examiners. A minimum of 20 beds is demanded, and the hostel may find it impossible to carry on.

Road Accidents

At the invitation of the Pedestrians' Association, a meeting of members of all parties was held in the House of Commons on Dec. 1st, with Sir Francis Fremantle in the chair. Viscount Cecil, president of the association, expressed the view that the vast majority of accidents could be avoided if traffic were properly regulated and adequate precautions were taken. On the motion of Sir Charles Oman, the following resolution was carried unanimously: "That this meeting of Members of Parliament, gravely concerned at the undiminished toll of road accidents in spite of the Road Traffic Act, hereby appoints a committee of both Houses for the purpose of considering questions affecting the general public in relation to the use of the roads."

North Staffordshire Royal Infirmary

Last week the Bishop of Lichfield dedicated, and Miss Harrison formally opened, a ward in this hospital in memory of the late Mrs. Dora Twyford, who in her lifetime was a benefactor to this and other medical charities in North Staffordshire. By her will she bequeathed £12,000 to the hospital for a memorial to her father and mother, and the money was used to create the orthopædic and X ray departments. In accordance with the terms of her will the trustees allocated a further £50,465 to liquidate the debt on the infirmary. The memorial ward is a unit providing for general surgical cases, with accommodation for post-operative shock cases, and has been adapted mainly from the former casualty and out-patient departments.

Society of Apothecaries Dinner

The yeomanry dinner last Tuesday commemorated the tercentenary of the occupation of the present hall in Water-lane, Blackfriars. It fell to Dr. V. S. Hodson, Master of the Mercers' Company, to propose the health of the society, which he described as exceptional in that it is a guild which still keeps in touch with its craft. Dr. Cecil Wall, the Master, in his reply, told how, on Dec. 3rd, 1632, the society entered into possession of its hall, and on Dec. 11th met there for the first time. The accounts for a dinner held before the end of that year were still available. At this dinner Thomas Johnson, editor of Gerard's "Herball," was admitted to the society without payment of a fee. The occasion was a "search day" and the guests included the censors of the Royal College of Physicians who had accompanied the wardens in their perambulations of the city. After a sermon a dinner was provided by the wife of the bedell at a cost of £9 10s. together with two salmon at 12s. The loving-cups contained, then as now, the spiced wine "hippocras," so called because it is strained through flannel or Hippocrates's sleeve. The accounts of the early days showed expenditure on rushes for the floor, often on nosegays, and sometimes on fuel; but no trace of a fire-place had been found in the hall and it was probably heated by a brazier. In concluding his historical retrospect the Master presented to the society, to mark the occasion, a large and handsome silver flagon made by A. Evelyn Barnard of London. The toast of the guests was proposed by Mr. Arthur Greenwood, M.P., late Minister of Health, who became a member of the society in 1930. Among them he welcomed especially the Master of the Grocers' Company, from which the Society of Apothecaries had sprung; Sir Arthur Robinson, Secretary of the Ministry of Health, "as representative of what I believe is the greatest department of State"; Dr. W. P. Graves, professor of gynæcology at Harvard University; and the prior of

St. Dominic's Priory, representing the former owners of the ground on which the hall stood—the Black Friars. In reply, Mr. L. H. Tufnell, Master of the Grocers' Company, begged the Apothecaries Society to return to the fold it left 315 years ago, but (changing the metaphor) admitted that the parent was very proud of its child. Sir Arthur Robinson, speaking of Mr. Greenwood, said he had left office with the respect and affection of everybody in the Ministry of Health; "for two years amid great difficulties he firmly and stubbornly did that which he thought right." He also recalled memories of Oxford when Dr. Cecil Wall was the first rifle shot in the university. In conclusion, Prof. Graves offered the thanks of an American visitor and the congratulations of the profession he represented.

Those present included Dr. M. H. MacKeith (dean of the medical school, Oxford); Prof. E. Fawcett (dean of the medical faculty, Bristol); Prof. J. Kay Jamieson (dean of the medical faculty, Leeds); Mr. W. Girling Ball (dean of St. Bartholomew's medical college); Prof. Albert Ramsbottom; Prof. W. W. Jameson; Prof. John Mellanby, F.R.S.; Prof. W. Blair Bell; Sir Walter Fletcher, F.R.S.; Sir Francis Fremantle, M.P.; and Sir Malcolm Delevingne.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Dec. 12th.—4.30 P.M., UNITED SERVICES. Paper. Surgeon Captain S. F. Dudley: Yellow Fever as Seen by the Naval Medical Officers of the Nineteenth Century. Lantern slides will be shown.

TUESDAY.—5 P.M., THERAPEUTICS AND PHARMACOLOGY. Discussion: The New Pharmacopœia. Openers: Prof. F. R. Fraser and Dr. C. H. Hampshire. 8.30 P.M., PSYCHIATRY. Paper. Dr. Henry Yellowlees: The Teaching of Psychological Medicine.

THURSDAY.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.) Cases. Dr. J. Franklin: 1. Trichomycosis Axillaris Flava. Dr. K. Sibley: 2. Folliculitis Ulerythema Reticulata. Dr. F. Silcock: 3. Multiple Idiopathic Pigment Sarcoma of Kaposi. Dr. A. Burrows: 4. Epidermolysis Bullosa. Other cases will be shown. 8.30 P.M., NEUROLOGY. Short papers. Dr. J. G. Greenfield: A Form of Progressive Cerebral Sclerosis in Children, Associated with Primary Degeneration of the Oligodendroglia. Mr. Hugh Cairns and Dr. W. Russell Brain: The Effects of Division of the Eighth Nerve in the Treatment of Aural Vertigo (Ménière's Syndrome). Dr. E. A. Blake Pritchard: The Clinical Significance of Changes in Tickle Sensibility.

FRIDAY.—5.30 P.M., PHYSICAL MEDICINE. Discussion: Assessment of Physical Efficiency. Openers: Dr. E. K. Le Fleming, Major-General P. H. Henderson, and Dr. C. B. Heald. MEDICINE: UNITED SERVICES. Members of these Sections are specially invited to attend. 8.15 P.M., OBSTETRICS AND GYNÆCOLOGY. Discussion: Recent Report of the Maternal Mortality Committee. Openers: Dr. W. H. F. Oxley and Prof. G. I. Strachan. RADIOLOGY. No meeting.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Dec. 12th.—8.30 P.M., Discussion on Skin Tests in Tuberculosis and Exanthemata, to be introduced by Dr. Richard A. O'Brien, Dr. William Gunn, and Surg. Capt. Sheldon F. Dudley.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

FRIDAY, Dec. 16th.—5 P.M. (at 1, Upper Montague-street, Russell-square, W.C.), Discussion on the Recent Trend of Cerebro-spinal Fever, to be opened by Dr. E. Ashworth Underwood, M.O.H., City of Leeds.

CHELSEA CLINICAL SOCIETY.

TUESDAY, Dec. 13th.—8.30 P.M. (at the Hotel Rembrandt, Thurloe-place, S.W.), M. Marcel Boulestin will open a Discussion on Voracity, Veracity, and Vitamins. The Meeting will be preceded by Dinner.

NORTH-WEST LONDON MEDICAL SOCIETY.

TUESDAY, Dec. 20th.—9 P.M. (at the Willesden Constitutional Club House), Discussion: The Immediate Outlook for Insurance Practice. Speakers: Dr. H. J. Cardale, Dr. E. A. Gregg, and Dr. A. Keith Gibson.

SOUTH-WEST LONDON MEDICAL SOCIETY.

WEDNESDAY, Dec. 14th.—9 P.M. (at the Bolingbroke Hospital, Bolingbroke-grove, Wandsworth Common), Discussion on the Treatment of Enlarged Tonsils in Children, to be opened by Mr. T. B. Layton and Mr. H. M. Wharry.

PADDINGTON MEDICAL SOCIETY.

TUESDAY, Dec. 13th.—9 P.M. (at the Great Western Royal Hotel, Paddington), Dr. James Neal: Some of the Medico-Legal Difficulties of Medical Practitioners.

BIOCHEMICAL SOCIETY.

FRIDAY, Dec. 16th.—4 P.M. (at the laboratories of J. Lyons and Co., Ltd., Hammersmith-road, Kensington, W.), Communications and demonstrations.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn-fields, W.C.

THURSDAY, Dec. 15th.—5 P.M., Prof. G. E. Gask: Experiences of the Surgery of the Sympathetic Nervous System. (Bradshaw lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, London, W.

MONDAY, Dec. 12th, to SATURDAY, Dec. 17th.—MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, London, W. Series of Lectures on Renal Disease. Tues., 4 P.M., Mr. H. L. Attwater: Hydronephrosis and Pyonephrosis. (Free to Members of the Fellowship of Medicine.)—INDIVIDUAL CLINICS are available daily by special arrangement with the Fellowship.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.

MONDAY, Dec. 12th.—10 A.M., Skin Department, Surgical Wards. 2 P.M., Gynæcological, Eye, and Genito-urinary Out-patients.

TUESDAY.—10 A.M., Medical Wards, Surgical Demonstration. 2 P.M., Throat, Nose, and Ear Out-patients. 4.15 P.M., Lecture, Mr. Steadman: Pyorrhœa.

WEDNESDAY.—10 A.M., Medical Wards, Children's Medical Out-patients. 2 P.M., Eye Department. 4.45 A.M., Venereal Diseases Demonstration.

THURSDAY.—10 A.M., Neurological Department. 11.30 A.M., Fracture Demonstration. 2 P.M., Eye and Genito-urinary Out-patients. 4.15 P.M., Lecture: Dr. Konstam: The Spleen and its Derangements.

FRIDAY.—10 A.M., Skin Department. 2 P.M., Throat, Nose, and Ear Out-patients.

DAILY at 2 P.M., Medical and Surgical Out-patients, Operations. The Lectures at 4.15 P.M. are open to all medical practitioners without fee.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James's Hospital, Ouseley-road, Balham, S.W.

TUESDAY, Dec. 13th.—4 P.M., Mr. L. Phillips: Anæsthesia and Analgesia in Labour.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.

TUESDAY, Dec. 13th.—3.15 P.M., Mr. W. B. Gabriel: Cancer of the Rectum: a Review of the Pathology and Results of Treatment.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY, Dec. 16th.—4 P.M., Mr. W. A. Mill: Difficulty in Swallowing.

ST. PETER'S HOSPITAL FOR STONE, POST-GRADUATE COURSE, Henrietta-street, Covent Garden, W.C.

WEDNESDAY, Dec. 14th.—3 P.M., Mr. J. G. Sandrey: Minor Surgery of the Urinary Tract.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL POST-GRADUATE SCHOOL.

WEDNESDAY, Dec. 14th.—4 P.M., Prof. C. Pannett: Ureteric Calculi.

LONDON JEWISH HOSPITAL, Stepney Green, E.

THURSDAY, Dec. 15th.—4 P.M., Mr. A. Brews: Methods of Dealing with Prolonged Labour.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, Dec. 13th.—5 P.M., Dr. S. E. Dore: Erythemato-squamous Eruptions.

THURSDAY.—3 P.M., Dr. I. Muende: Pathology Demonstration.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.

WEDNESDAY, Dec. 14th.—4.15 P.M. (Royal Infirmary), Dr. F. Smith: Skin Cases.

MANCHESTER ROYAL INFIRMARY.

TUESDAY, Dec. 13th.—4.15 P.M., Prof. A. H. Burgess: Recent Experimental Investigations upon Hepatic Function in Relation to Surgery.

FRIDAY.—4.15 P.M., Dr. W. Brockbank: Demonstration of Medical Cases.

Births, Marriages, and Deaths

BIRTHS

LEARMONT.—On Nov. 25th, at The Duddery, Haverhill, the wife of Alan A. Learmont, M.B., Ch.B., of a son.

O'MALLEY.—On Dec. 1st, at Welbeck-street, W., the wife of Flight-Lieutenant C. J. S. O'Malley, R.A.F., Medical Branch, of a daughter.

WARNER.—On Dec. 4th, at Wilbraham-place, S.W., the wife of E. C. Warner, M.D., of Devonshire-place, W., and of Wimbledon, of a daughter.

MARRIAGES

ROE—WHITLEY.—On Dec. 1st, at Kidds, Dundee, J. T. Nicol Roe, M.D., D.P.H., South Mimms, Middlesex, to Ethell Whitley, Dundee.

DEATHS

ADAMS.—On Dec. 1st, at Worthing, Charles Edmund Adams, M.R.C.S., &c., of Silverbeech, Campbell-road, Croydon.

HOUSMAN.—On Dec. 1st, at The Lower House, Tardebigge, after a long illness, Basil Williams Housman, F.R.C.S., aged 68.

ROBERTS.—On Nov. 29th, at Bedford, Kilham Roberts, M.R.C.S., L.R.C.P.

SLIGHT.—On Dec. 3rd, at University-road, Leicester, John Duncan Slight, M.A., M.D. Edin., aged 61.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

PROBLEMS IN PUBLIC HEALTH IN A NEW AREA

AT a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine, held on Nov. 25th, Dr. E. W. CARYL THOMAS spoke of the acquisition, in 1920, of 2770 acres of land in South-West Essex by the London County Council, and of its development as the Becontree housing estate. In the first few years development was comparatively slow, and took place in sectors widely separated one from another. By 1927 the general filling up of the estate had begun, and the rate of growth was accelerated, involving rapid importation of large numbers of residents.

The first problem was the determination of population. The actual number of the population was, until the taking of the census in April, 1931, unknown, the only information obtainable from which an estimate could be made being that from the returns of the number of occupants of houses visited for various purposes. The age-distribution of population was unknown, although it was obvious that the distribution was abnormal. It was ascertained that instead of the under-15 population being 26 per cent. of the total as normally obtains, the percentage was nearer 45. Compared with a population of normal age-distribution, this new population would have a high birth-rate and a low death-rate. The relatively large population under 5 increased the maternity and child welfare work; a higher proportion of school places is required; and there is a higher relative incidence of infectious diseases, arising from the proportionately greater number of susceptibles, apart from any question of alteration in the immunity index.

GENERAL PROBLEMS OF DEVELOPMENT

The rapid development of Becontree, without preliminary preparation, led to difficulties in connexion with transport; general sanitation, including disposal of house refuse, sewage disposal, and water-supply; educational facilities; and general health services.

With regard to educational facilities, in the early days of development schools were put up very gradually, with a result that for hundreds of children there was no school accommodation. Some children were at Becontree two years before there was a vacancy for them, and many children who were 12 or so when their families came here never attended school after leaving London. No secondary or central school accommodation had even yet been provided in the district which had now an elementary school population of 30,000. As to general health services, the fact that the accommodation in the Romford Isolation Hospital was very limited resulted in the enforced treatment of some hundreds of cases of infectious diseases in their homes. In 1930, out of 513 cases of scarlet fever, 161 were admitted to the local isolation hospital and 52 to others, leaving 300 treated at home. A comparison was made of the effect of keeping cases at home or at hospital in relation to the spread of infection. Dr. Thomas quoted statistics suggesting that the retention of scarlet fever cases at home had had little effect in spreading infection. The absence of a general hospital in the neighbourhood necessitated the use of the poor-law hospital as an emergency general hospital. It was only last year that additional beds were made available at the local Ilford emergency hospital. The general nursing service, again, had to be expanded from the two nurse midwives provided in 1927 to the twelve resident nurses now in the employ of the local district nursing association.

BEHAVIOUR OF INFECTIOUS DISEASES

Dr. Thomas spoke of the behaviour of some of the infectious diseases, notably measles, tuberculosis, and scarlet fever and diphtheria. In 358 families when measles was introduced by one member, it spread to all the remaining non-immune members—namely, 963 children. The number of those not attacked after exposure to an illness alleged to be measles was 135, of whom 53 were infants under one year of age. The number of children who suffered this time from an alleged attack of measles after being supposed to have been previously exposed was 51. These figures suggested that in this area exposure to measles did not give partial immunity to susceptibles. As to tuberculosis, the figures obtainable brought out two points: (1) the very high level of the rate of tuberculosis amongst the transferred population; (2) recognising that the local figure was depleted by the transfer out of the district of cases who had contracted the disease in it, but had not been notified in the district, the absence of any indication of the effect of beneficial housing in reducing the extent of this disease. The important features demonstrated by the relative incidence of scarlet fever and diphtheria were that the curve was essentially similar for both diseases; that for a number of years during the early development of the estate the incidence of infection was below the average; that this period was followed by one during which the relative incidence was high; and that this was then followed by a gradual return to average incidence.

Dr. Thomas gave his reasons for disregarding the effect of schools in this epidemiological sequence. The effect of absence of isolation accommodation could affect scarlet fever only, as practically all cases of diphtheria were removed. The peak period, however, did not coincide with that at which most cases of scarlet fever were treated at home. After excluding various other possible causes of the incidence of these diseases, he said that the suggestion that it was due to the large number of children giving a large proportion of susceptibles who on becoming infective handed on the diseases to a large number of others could not be substantiated. The difference between that district and one of a normal age-distributed population was that whereas here in 1927 there was an under-15 population of 18,000 and a total population of 48,000, other districts would have that number of children in a total population of 75,000. Put another way, in that district the ratio of immunes to susceptibles was 1·5 to 1; whereas in a normal district the ratio was 3 to 1. The suggestion implied that the low immunity shown by the children was due to the loss of their previously existing immunity for want of subliminal infection, and this loss was due to the relative paucity of immunes. If this was so, it must mean that susceptible children received their subinfective doses from healthy carriers.

Two lines of inquiry were started to obtain information on this point, both making use of Schick reactions. In the first, an attempt was made to determine the influence on the remaining susceptible members of a family of the occurrence of a case of diphtheria in the home. In such a case the percentage of positive reactors in children under 8 was 57·7, compared with 72·7 occurring in the general population; of children aged 8 to 12, the figures were 56·6 and 63·6; and of those over 12, 46·6 and 45·9. The occurrence of a case appeared then to have a definite, though slight, effect in immunising those of younger ages in the household. The other line of inquiry was to determine the percentage of Schick reactors at various ages in relation to the number of immunes in the household. The figures obtained of cases where a large number of immunes were present were small and probably valueless. Considering only the cases where there were 4, 3, and 2 immunes in the family, of those 7 years of age the percentages of positive reactors were 19, 58, and 81; of children of 7 and 8, the figures were 40, 54, and 80; of children of 9 and 10, they were 31, 48, and 80; and of those

11 and over, they were 25, 48, and 66. That is to say, of children of the same age-groups, the percentage of positive reactors definitely increased according as the numbers of immunes in the family decreased. Dr. Thomas thought this lent support to the suggestion, made on general grounds, that the immunity developed by increasing years is due to subinfective doses received from healthy adults, and that this population suffered over a period of time by reason of its relative shortage of carriers. If this was so, it seemed advisable in developing an estate not to allow it to lose its immunity, and to this end certain steps should be taken. Firstly, development should be gradual; and, secondly, the relative immunity of the total population should not be altered too widely. This could be attained either by the transfer of a population of normal age-distribution, or by immunisation of the susceptibles of the population before transfer.

EFFECT ON HEALTH OF RESIDENCE ON ESTATE

Considering the question of advantages of living on an estate such as Dagenham the following requirements for housing of the poor had to be considered: (1) the accommodation should be at a rent within the means of the occupants; (2) it should be within walking distance of the place of employment; and (3) it should be accessible to cheap markets for food. In connexion with (1), rents at Dagenham were high, ranging from 10*s*. 6*d*. (inclusive) for a two-roomed maisonette to 18*s*. 6*d*. for a five-roomed, or 22*s*. 6*d*. for a six-roomed cottage. With regard to (2), there was at the time the estate was started very little local employment. At the time of the census, in 1931, one-third of the employed worked within 5 miles of the centre of the estate, one-third between 5 and 10 miles from it, one-third between 10 and 15 miles, and about 1 per cent. between 15 and 20 miles. For over half this number transport charges might be over 8*s*. a week, apart from the disadvantage of having to spend a large portion of the day in travelling. With regard to the accessibility of cheap markets for food, the district was placed on the east and cheapest side of London, but the scattered arrangements of the shops on the estate gave a virtual monopoly to the shopkeeper.

The death-rates for each sex in the various age-groups showed little departure from the rates obtaining for the country as a whole, except that the rates for groups 20 to 34 are high for males, and groups 25 to 34 for women; these groups, it would be noticed, were those for which the tuberculosis rate is high.

PEKIN MAN

IN his Croonian lecture, delivered before the Royal Society on Dec. 8th, Prof. Davidson Black, F.R.S., brought up to date the story of the discovery of *Sinanthropus pekinensis*. The earlier part of this story has been told from time to time in our columns,[1] and much has now been published concerning the significance of Pekin man. Needless to say, however, Dr. Davidson Black and his colleagues have not rested content with the first fruits of the investigation of the Choukoutien deposits. The support of the Rockefeller Foundation has made it possible for him to forsake his academic duties as professor of anatomy at the Peiping (Pekin) Union Medical College, and take charge of the research carried on under the auspices of the Geological Survey of China.

The season of 1931, he said, was memorable particularly for the discovery, in an undisturbed fire-blackened stratum, and in association with other sinanthropus remains, of a great series of crude stone artefacts "undoubtedly the handiwork of that early hominid." It will be recalled that in 1929 a well preserved adolescent skull was found, and in the following summer a second skull specimen was recovered which proved to be that of an adult. At various times since 1928 skeletal fragments of sinanthropus, other than skull parts, have been found. Thus, up to this year, there have been recovered a semilunar wrist-bone, the greater part of a left clavicle, a number of terminal phalanges, and six lower jawbone fragments representing all regions of the mandible. A study of the endocranial case of the adolescent skull suggests that its owner was right-handed and had a nervous mechanism for the elaboration of articulate speech.

The cavern where the remains have been found must have been occupied by sinanthropus for hundreds and probably thousands of years; for more than 30 metres of undisturbed strata remain, exhibiting throughout evidence of his presence there. During all the latter period the fauna of the surrounding country did not change, but remained typically that of the upper part of the Lower Pleistocene. From a study of the stone artefacts, said Prof. Black, it appears certain that the cultural layers of the deposit constitute a single stratigraphic and palæontological whole. "Sinanthropus, culturally speaking, is to be considered as an early representative of the Old Palæolithic cycle, but his craft displays a crudity which indicates that he but obeyed and never mastered the materials with which he worked. It would indeed be difficult to conceive of more primitive methods in the hands of individuals known to be familiar with the use of fire and probably capable of articulate speech."

[1] THE LANCET, 1929, ii., 683; 1931, i., 198.

INTERNATIONAL FLORENCE NIGHTINGALE MEMORIAL

THE demand in all countries for nurses trained in public health work, and for teachers in training schools who are qualified to emphasise the preventive and social as well as the curative aspects of disease, led the League of Red Cross Societies some 12 years ago to consider the establishment of post-graduate courses for nurses. With the coöperation of various nursing, educational, social service, and health authorities, the first of such courses was instituted in London in 1920, when 19 women from countries as far apart as Venezuela and Rumania attended a year's course in public health at Bedford College, University of London, in conjunction with the College of Nursing. In 1924 the first course for nurse administrators and teachers in schools of nursing was held, and since then these two courses have been continued year by year to the great benefit of nurses. It is proposed, as an international memorial to Florence Nightingale, that the work of organising these courses shall be handed over to a memorial committee, of which Dame Sarah Swift, the British Red Cross Society, 14, Grosvenor-crescent, is acting as honorary treasurer. An appeal is being made for donations to finance scholarships to enable nurses to take these courses, as a permanent memorial to Florence Nightingale.

TORQUAY

Mr. George Robey, on his return from the South of France a fortnight ago, is stated to have said: "They can keep the Riviera. Talk of the winter climate down there; give me Torquay or Paignton any day." The advantages of Torquay are described no less cogently but more specifically in an attractive booklet issued by the corporation. It starts with a strip of woodland between moor and sea of unsurpassed beauty; although the borough has more than 46,000 inhabitants it is spread over an area of 5000 acres, which includes 500 acres of open country, and there is within its boundaries a large variety of climate according to the elevation and exposure selected. Characteristic is the small daily range of temperature, which is less than 8° F. for the winter months, and makes little demand on circulatory or excretory reserves. Frosts are of short duration and seldom severe; snow is practically unknown and the winter sunshine averages about 29 per cent. of the possible. Visitors can make the most of this by frequenting the vita-glass sun lounge, a room 95 × 18 ft. attached to the medical baths, and in these baths, reconstructed ten years ago, practically all kinds of spa treatment

are available. Except in the simplest form they can only be taken under the prescription of a qualified medical practitioner. Sea-water is available for the Aix and Vichy douches and it is claimed that the reaction after a sea-water bath is generally more pronounced than after a fresh-water bath at the same temperature. Accessory treatments comprise diathermy, radiant heat, and various forms of mud and peat packs. Torquay has not been backward, too, in developing its own natural mineral water, which is of the same class as those of Evian and Vittel, and regarded as serviceable in various gastro-intestinal, urinary, and metabolic disorders. The booklet contains a list of the many hotels which are willing to provide normal invalid diet without extra charge; hotels which have no lift are generally able to provide bedrooms on the ground floor for those who have no desire to climb stairs. The handbook may be obtained, post free, from 49, Publicity Offices, Torquay.

BOURNVILLE CHOCOLATES

WE have received from Messrs. Cadbury Bros., Ltd., a certain number of specially designed caskets containing various assortments of their well-known productions. The samples of which particular mention might be made are the King George Chocolate, the Princess Elizabeth Chocolate, the Milk Tray, and the Block Chocolate, with which the name of the firm is associated. An elaborate series of assortments—Fruit Centres, Nuts, Marzipan, and others—gives a good range of choice for gifts. A sample has also been sent to us of Bourn-vita, the new food-drink, which is made with fresh full-cream milk and eggs from British farms, British malt, and Empire cocoa. This preparation was recently noticed in these columns.

CORRIGENDA

ADDISONIAN ANÆMIA FOLLOWING GASTRECTOMY AND GASTRO-JEJUNOSTOMY.—The paper in our last issue on this subject, by Dr. R. A. Rowlands and Dr. S. Lévy Simpson, contained a histological report by Prof. H. M. Turnbull (page 1205). The report, at its 19th line should read: "The ulcers, where present, are very shallow, being at their deepest apparently confined to the mucosa. Their bases are formed by a very deep layer of densely fibrotic *submucosa*. This thickening of the *submucosa* is present in all sections whether the mucosa is ulcerated or not . . ." The word in italics was wrongly given as "mucosa."

When addressing a meeting of the National Birth Control Association on Nov. 29th Lady Limerick said, "Birth control does not imply an immoral outlook." This sentence was not reported correctly in our notice of the meeting last week.

Appointments

DAWKINS, C. J. M., B.Chir. Camb., has been appointed Anæsthetist at the Hampstead General and North-West London Hospital.

GARDHAM, A. J., M.S. Lond., F.R.C.S. Eng., Surgeon to Out-patients, Hampstead General and North-West London Hospital.

GRIFFITHS, J. I., M.B., B.S. Lond., F.R.C.S., Assistant Surgeon to the Ear, Nose, and Throat Dept., Queen Mary's Hospital, Stratford.

KELLY, O. R. M., M.B., B.S. Lond., Medical Superintendent, Whipps Cross Hospital, Leytonstone.

Royal Eye Hospital, St. George's-circus, S.E.—KING, E. F., M.B., Ch.B. Bristol, F.R.C.S. Eng., D.O.M.S., and RYCROFT, B. W., M.D., Ch.B. St. And., F.R.C.S. Eng., D.O.M.S., Assistant Surgeons.

ROYAL SUSSEX COUNTY HOSPITAL.—Lord Leconfield, Lord-Lieutenant of Sussex, last week unveiled in the casualty department a portrait by Mr. Percival Anderson of Mr. Harry Preston. At the unveiling ceremony Mr. Preston was described as the hospital's greatest benefactor. He has been successively vice-president and president, and has been instrumental in raising about £30,000 for the institution.

Vacancies

For further information refer to the advertisement columns

Aberdeen Dispensary and Vaccine Institution.—Hon. Physician to Gynæcological Dept.
All Saints' Hospital for Genito-Urinary Diseases, Austral-street, S.E.—Res. H.S. At rate of £100 to £150.
Bedford County Hospital.—Second H.S. At rate of £140.
Belfast, Joint Nursing and Midwives' Council.—Examiners.
Bradford Royal Eye and Ear Hospital.—Jun. H.S. £150.
Bristol General Hospital.—Two H.P.'s. Two H.S.'s, Res. Obstet. Officer. H.S. to Special Depts. Each at rate of £80. Also Cas. H.S. At rate of £100.
Buxton, Devonshire Hospital.—Asst. H.P. At rate of £150.
Cardiff, Welsh National School of Medicine.—Mansel Talbot Professorship of Preventive Medicine. £1500.
Children's Hospital, Hampstead, N.W.—Res. M.O. At rate of £100.
Coventry and Warwickshire Hospital.—Res. H.P. and Res. Cas. O. £160 and £125 respectively.
Croydon General Hospital.—Res. M.O. £200.
Evelina Hospital for Sick Children, Southwark, S.E.—H.S. At rate of £120.
Guildford, Royal Surrey County Hospital.—H.S. £150.
Hampshire C.C.—Asst. County M.O. £600.
Hospital for Sick Children, Great Ormond-street, W.C.—Research Fellow. £400.
Hove, Lady Chichester Hospital.—Sen. and Jun. H.P. At rate of £100 and £50 respectively.
Hull Royal Infirmary.—Res. Cas. O. At rate of £200.
Ilford, King George Hospital.—Hon. Neurologist. Also H.S. At rate of £100.
Indian Medical Service.—Commissions.
L.C.C. Mental Hospital Service.—Asst. M.O. £475.
London Lock Hospital, 91, Dean-street, W.—Res. M.O. At rate of £175.
London University.—Readership in Physiology at Guy's Hospital Medical School. £800.
Manchester, David Lewis Epileptic Colony.—Res. Med. Director. £700.
Manchester Ear Hospital, Grosvenor-square, All Saints.—Res. H.S.
Manchester Royal Infirmary.—First Asst. in Clinical Laboratory, £350.
Mansfield, Notts, Harlow Wood Orthopædic Hospital.—Res. Surg. O. £275.
Maudsley Hospital, Denmark-hill, S.E.—Asst. M.O. £475.
Middlesex C.C.—Asst. Dental Officer. £500.
Mildmay Mission Hospital, Austin-street, Bethnal Green, E.—Asst. Cas. O. At rate of £125.
New End Hospital, Hampstead, N.W.—Res. Asst. M.O. £350.
Northampton General Hospital.—H.S. to Ear, Nose and Throat Dept. At rate of £150.
North Middlesex County Hospital, Edmonton.—Med. Supt. £1300.
Nottingham City Infirmary.—Third Res. M.O. £350.
Nottingham General Hospital.—H.S. At rate of £150.
Oxford, Radcliffe Infirmary and County Hospital.—Hon. Physician, Asst. Physician, and Asst. Pathologist.
Princess Beatrice Hospital, Richmond-road, Earl's Court, S.W.—Sen. Res. M.O. £150.
Princess Louise Kensington Hospital for Children, St. Quintin-avenue, W.—Hon. Asst. Surgeon to Nose, Throat, and Ear Dept.
Royal Northern Hospital, Holloway, N.—H.S. At rate of £70.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—Hon. Gynæcological Registrar.
Ryde, Royal Isle of Wight County Hospital.—Res. H.S. £180.
St. Mark's Hospital for Cancer, Fistula, &c., City-road, E.C.—Res. Surg. O. At rate of £150.
St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Fourth Anæsthetist. £25.
Salvation Army Mothers' Hospital, Lower Clapton-road, E.—Jun. Res. M.O. At rate of £60.
Sheffield Children's Hospital.—Res. M.O. £175.
Southampton, Royal South Hants and Southampton Hospital.—Res. Surg. O. At rate of £200. Also H.P., H.S., Cas. O., and Res. Anæsthetist and H.S. to Ear, Nose, and Throat Department. Each at rate of £150.
West End Hospital for Nervous Diseases, Welbeck-street, W.—Registrar. At rate of £200.
West London Hospital, Hammersmith-road, W.—Hon. Med. Reg. Also Gynæcologist.
Wolverhampton, New Cross Hospital and Institution.—Asst. Deputy M.O. £350.
Woolwich and District War Memorial Hospital, Shooters-hill, S.E.—Hon. Anæsthetist. Also H.P. and H.S. Each at rate of £100.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Knottingley (York), Hay (Brecknock), Burgess Hill (Sussex), and Warlingham (Surrey).

SHEFFIELD ROYAL INFIRMARY.—At a special meeting of the board of this hospital last week it was stated that the bank overdraft amounts to £67,000, and that whereas last year the income was £65,245, this year to the end of November it was only £50,660. Short of a substantial improvement during the next six months the board fear that it may be necessary to close down two wards containing 75 beds, which would involve adding 1275 cases to the waiting-list in the course of 1933.